Future Watch: Improved weapons for your computer security arsenal. PAGE 32

A look at the top 10 IT news stories of 2003. PAGE 14

COMPUTERWORLD

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Prioritizing IT projects is always hard. And it's even tougher when you get unfunded mandates to beef up security and comply with new legislation. Here's how CIOs like Bob Plante (right) at CIT Group are juggling the workload.
Page 35

GIORGIO PALMISANO

Too Much To Do!

Another State Looks Offshore

Signing of low bidder faces scrutiny in Wash.

BY PATRICK THIBODEAU

A decision by the Washington State Health Care Authority to use offshore labor for a major IT project was based in part on some pretty simple arithmetic: The contractor's bid was about $3 million below the next lowest bid.

But the project hasn't worked out as planned. It's running over budget, and an internal state document written in October warns of a "significant risk" that it won't meet the agency's requirements. The project has also prompted state legislation that would effectively bar state agencies from future use of offshore contractors.

"I don't think that Washington state tax dollars should be used to create jobs overseas, when we've got skilled workers here," said State Rep. Zack Hudgins, a Democrat. When the Washington Legislature reconvenes next month, Hudgins plans to introduce a bill that would block the state from sending work offshore.

"I think we may save money in the short term by going to our lowest bidder," Hudgins said. "But in the long term, we undermine our communities, our job base, our tax base."

Offshore Labor, page 49

MORE ONLINE

Union urges IBM workers to fight plan to move jobs offshore: **QuickLink 43581**

Comprehensive coverage of offshore outsourcing issues:
QuickLink a2290
www.computerworld.com

IT Vendors Cast Votes With Their Checkbooks

Associations hope to avoid regulation; five key lawmakers benefit from industry funding

BY DAN VERTON
WASHINGTON

With the Democratic Party a month from the first caucus in the presidential nominating process, the high-tech industry has cast a vote that so far favors President George W. Bush, along with a select group of influential members of Congress.

Threatened by the specter of more regulation and higher taxes, IT hardware and software manufacturers and the industry associations that lobby for them in Washington have donated nearly as much money to the Bush campaign as to all of the Democratic candidates combined. Political action committees in the IT sector this year have given Bush more than $1.2 million, compared with $387,886 for Democratic front-runner Howard Dean, according to the most recent filings with the Federal Election Commission.

Of the $113 million donated since 1998 to political candidates for federal office by individuals, companies and associations in the IT sector, roughly half has gone to Democrats and half to Republicans. However, a *Computerworld* review of FEC data shows that two large vendor associations and the prominent member companies of other influential associations have given more than $380,000

IT Lobbying, page 16

INSIDE
PAGE 16

EMC Shapes Plans for VMware

Says it will integrate server virtualization technology next year

BY PATRICK THIBODEAU AND LUCAS MEARIAN

EMC Corp. officials said last week that the company will move quickly to release products that incorporate VMware Inc.'s server virtualization technology, once EMC's $635 million acquisition of VMware is completed early next year.

The officials also stressed that users won't have to buy EMC products to take advantage of VMware's technology and pledged to increase research and development at the acquired company.

The possibilities for both vendors' product lines drew some users' interest.

Robert Stevenson, a technology strategist at The Weather Channel Inc. in Atlanta, helps oversee about

EMC/VMware, page 12

More Inside
Timeline: EMC has been on a software vendor buying spree for over a year.
PAGE 12

NEWSPAPER

Body optimizes temperature by sweating.

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CONTENTS

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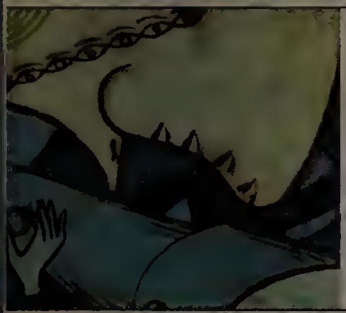

One Version of the Truth

In the Management section: For business intelligence systems, the Holy Grail is to produce "a single version of the truth." But getting there isn't just about buying and deploying new software tools. It entails painstaking data modeling, plus political and turf battles. **Page 38**

Overcoming Web Services Insecurities

In the Technology section: Putting an application tied to sensitive data on the Web sounds like a recipe for disaster. Not so, say users, if you follow the Web services security model — even though the security standards themselves aren't complete. **Page 23**

NEWS

6 **Sun plans to broaden** its IT services portfolio through internal offerings and third-party deals.

7 **Delta Air Lines** says a test of RFID technology for baggage handling was a success. But funding is an issue.

7 **PeopleSoft releases** connectors that tie modules in its applications with software it acquired when it purchased J.D. Edwards.

8 **HP is testing** 2.5-in. disk drives for use in its ProLiant servers next year.

10 **Saddam Hussein's capture** didn't really test the IT capabilities of the "digitized" unit involved.

10 **Rival vendors join forces** to create a standard user interface for managing servers.

12 **Microsoft delays** BizTalk Server's ship date until early next year. But the packaging and pricing of the third major release of the software won't change from the previous one's.

THE TOP 10 STORIES OF 2003.

TECHNOLOGY

28 **Q&A: Digging Into Documents.** Ronen Feldman, president of ClearForest, says text mining can transform business research.

30 **Hands On Reviews: Taming the Rattle and Hum.** Learn how to reduce the decibel levels in your home office.

32 **Future Watch: Digital Defense.** Researchers are learning to make systems more adaptive and resilient, even in the face of unknown attacks.

33 **Security Manager's Journal: Snort Enhancements Suppress IDS Headaches.** Mathias Thurman finds that new features in Snort intrusion-detection software dramatically reduce false alarms.

MANAGEMENT

35 **Too Much to Do.** Five CIOs talk about how they must prioritize new legislative mandates and integrate them with their regular IT projects.

40 **Q&A: BI: Last to Leave.** Data management consultant William McKnight discusses why business intelligence is a laggard when it comes to outsourcing IT projects overseas.

42 **Q&A: Newsmaker.** CIO Larry Buettner wants to use data marts and wireless IT to better serve the corporate customers of fleet management company Wheels Inc.

OPINIONS

8 **On the Mark: Mark Hall** learns that some IT shops are squandering a chance to get some of Microsoft's money. And he thinks high-tech IPOs will be fashionable in 2004.

20 **Maryfran Johnson** suspects that IT's priorities for next year will get scrambled by lawyers, auditors and worried boards of directors.

20 **Pimm Fox** visits Europe and learns from a local expert what companies there look for in their senior IT leaders.

21 **Michael Gartenberg** drops a few surprises into his 10 predictions for 2004.

34 **Nicholas Petreley** reinterprets a classic Christmas poem to reflect the year's leading IT trend.

42 **Peer to Peers: Norbert J. Kubilus** spells out the importance of succession planning and offers tips for developing your company's next CIO.

50 **Frankly Speaking: Frank Hayes** doesn't think 2004 will be a banner year for utility computing or Linux desktops. He says security, RFID and staff retention may be the year's top IT issues.

DEPARTMENTS/RESOURCES

At Deadline Briefs 6
News Briefs 8, 12
Letters 21
IT Careers 44
Company Index 48
How to Contact CW 48
Shark Tank 50

ONLINE

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FORECASTS '04

Safety Gauge

SECURITY: More creative forms of spam, stronger desktop management controls and a major incident involving the disclosure of corporate information through instant messaging or a Wi-Fi breach are among Peter H. Gregory's predictions for the coming year. **QuickLink 43468**

Death of the Microprocessor

HARDWARE: Expect to see full "microsystems" stamped on a single chip and more micropayments on the Internet, says Sun CTO Greg Papadopoulos. **QuickLink 43142**

Hey, It Could Happen! A Contrarian's Predictions

DEVELOPMENT: Johanna Rothman may have an opaque crystal ball, but she offers lots of insights for improving software development. **QuickLink 43592**

MORE FORECASTS AT QUICKLINK a3880

Will ID Theft Be The Christmas Grinch?

PRIVACY: Don't believe all of the hype about identify theft, says columnist Jay Cline. But keep a shredder handy. **QuickLink 43632**

Managing and Securing Your Mobile Workforce

MOBILE/WIRELESS: Cisco CIO Brad Boston offers tips on handling the inevitable proliferation of wireless mobile devices in your company. **QuickLink 43471**

What's a QuickLink?

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QuickLink a2570

The Online Store
QuickLink a2420

AT DEADLINE

IBM, French Bank Set Up IT Venture

IBM and BNP Paribas said they're forming a joint venture that will manage the Paris-based bank's IT infrastructure. The deal, valued at up to $1.2 billion over five years, covers the bank's mainframes, 7,000 servers, and storage devices with a total capacity of 400TB. Both companies will contribute workers to the joint venture, which will start with about 450 employees.

Microsoft Hit With Another Lawsuit

Seattle-based RealNetworks Inc. filed a lawsuit alleging that Microsoft Corp. has illegally tried to control the market for digital media technology. The suit, filed in federal court in San Jose, claims that Microsoft has forced PC makers to include its Windows Media Player on systems and restricted how rival software can be installed. In response, Microsoft said there is "vibrant competition" in the digital media market.

Citrix Buys Tools For Accessing PCs

Citrix Systems Inc. said it's buying Expertcity Inc., a Santa Barbara, Calif.-based vendor of software that lets end users access remote PCs via the Web. Expertcity's technology is primarily used by consumers and small businesses, but Fort Lauderdale, Fla.-based Citrix hopes to make the software more appealing to corporate users. The purchase price is $225 million in cash and stock.

Red Hat Reports Profit, Acquisition

Red Hat Inc. reported a $4.1 million profit on $33.1 million in revenue for its third quarter, which ended Nov. 30. Revenue was up 36% year over year. Red Hat also said it will buy Sistina Software Inc., a Minneapolis vendor of storage tools for Linux systems.

Sun Tries to Boost Its IT Services Arm

Ties utility computing and managed services, moves to broaden its offerings

BY CRAIG STEDMAN
BURLINGTON, MASS.

SUN MICROSYSTEMS INC. executives last week outlined steps the company's IT services unit is taking to make itself more competitive with the services operations at IBM and Hewlett-Packard Co.

During a press briefing at Sun's facilities here, company officials said Sun Services recently combined its managed services and utility computing operations under one executive. They said they hope to use utility computing installations to boost the adoption of data center services built around Sun's N1 resource management technology.

Sun also plans to expand its IT services offerings into areas such as managed network security and analysis of software code for corporate users. Patricia Sueltz, executive vice president of the revamped Sun Services, gave the unit's current services portfolio a grade of C. "We've got a ways to go," she said.

In addition, Sun Services has begun working more closely with the company's sales force to prepare bids and design system installations for customers. Sueltz said that's part of a strategy to make the organization more of a general IT contractor, along the lines of what IBM and HP do.

Another Approach

However, Sun is taking a much different approach. The company began a managed services marketing push last April under the direction of Sueltz, who had taken over at Sun Services 18 months ago [QuickLink 34945], and its services workforce is smaller than those of IBM and HP. As a result, Sun is focusing on remote management capabilities and contracts that stop short of full IT outsourcing deals.

"We're really going to show how you can use technology to run a services business," Sueltz said, adding that Sun users will retain control of their IT systems and staffs.

Sun's approach suits Justin Shaffer, director of operations at MLB Advanced Media LP, a New York-based company that runs the Internet operations of Major League Baseball and all of its teams. MLB Advanced Media uses Sun's hardware and Web server software to run its Web sites, and Shaffer's staff is working with Sun Services on a variety of technical improvement projects.

TECHNOLOGY PLANS

The company will use both internal offerings and third-party deals to increase its managed services portfolio. For example, a partnership agreement is in the works with a provider of network security services.

Sun plans to add a software development kit during the second half of 2004 to make it easier to integrate data center management tools from other vendors with its N1 technology.

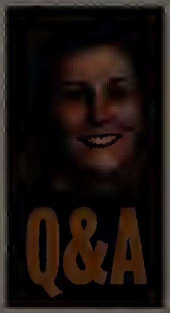
"We retain the architectural control, but we almost have an extra set of eyes and hands," Shaffer said. He said he prefers that kind of relationship to one in which a company such as IBM or HP would take over management of his systems. "I probably wouldn't get fired for choosing them," he said. "But I don't think I'd have the chance to do some of the things as quickly as we do now."

However, IBM and HP also give users the option of retaining control of their systems, said Forrester Research Inc. analyst Frank Gillett. "Everybody offers managed services," he said. "It's just that in Sun's case, if somebody wants to do outsourcing, they have to turn to one of its partners."

Judith Hurwitz, president of Hurwitz & Associates, said Sueltz has made progress in converting Sun Services from a hardware maintenance organization to "a true consulting-services business." But Sun still can't match the breadth of services capabilities that users can get from IBM and HP, she added, saying, "Right now, I see them as just being in a different league." **43645**

Services Chief Says Her Unit Is Making Progress

Since she became executive vice president of Sun Services 18 months ago, **Patricia Sueltz** *has replaced most of the unit's management team, cut its workforce and redirected it toward higher-level consulting and managed services offerings. Sueltz last week spoke with* Computerworld*'s Craig Stedman about the current state of affairs at Sun Services. Excerpts follow.*



At a briefing last December, you detailed a lot of changes you were making, both internally and in the kind of services you offer. Are you where you want to be now? I tend to be a perfectionist, so I'm not where I want to be. But we have made a lot of progress. We've changed nine of our 11 executive staff members. In the fiscal year ending in June, we came in with $3.641 billion in revenue, up about 7% year over year. I can't break out our profit, but let's just say we grew profit 19%. In the quarter that ended in September, we were at 36.7% of Sun's revenue. A year ago, it was about 27%.

Is that the kind of percentage you want to see? It's good and bad news, because in the end, Sun is really not in the services business. We're a systems company, and my job is to support and amplify the software and hardware we sell. I think in a healthy business environment, [that percentage] should be somewhere in the high 20s or low 30s. But in tough times, I'm glad to take up some of the slack.

As part of your managed services push, have you tried to win business from companies that don't have any Sun equipment? I haven't gone that far. I'm not an arms dealer. But we do a lot of business with not-Sun-only customers, because the world isn't homogeneous. The way I solve problems, however, is not to be all things to all people. We do that not by throwing a lot of bodies at problems, but by utilizing technology and teaming up [with partners].

Your strategy stops short of outsourcing and leaves users in control of their IT systems and staffs. Is that a way of making lemonade out of the fact that you don't have as many services workers as IBM and HP do? I don't see it that way. I think of it as being counterintuitive to just throwing bodies at a problem. We're saying, "Let's put our experts in but leave the users in charge." I think we started with a lot more sugar than lemons on that one.

MORE ONLINE

To read the full interview with Sueltz, go to our Web site:
QuickLink 43633
www.computerworld.com

Delta Says Radio Frequency ID Devices Pass First Bag-Tag Test

Technology scores high on luggage tracking, but costs slow airline's plans

BY BOB BREWIN

Delta Air Lines Inc. last week said it got accuracy levels ranging from 96.7% to 99.9% during a test in which it used radio frequency identification (RFID) tags to track 40,000 pieces of luggage from check-in to loading on planes.

The success rate of the RFID technology was far better than the 80% to 85% accuracy rate that's typically provided by bar code scanners, according to officials at Delta and the IT vendors that took part in the test. Pat Rary, manager of baggage strategy at Atlanta-based Delta, said the trial run at the airport in Jacksonville, Fla., also met a key requirement: It was invisible to the airline's check-in agents and required no new training.

Delta spokesman Reid Davis warned that the airline and others in the cash-strapped industry will likely need to proceed slowly with any systemwide rollouts of RFID tags. Delta operates at 81 major airports worldwide, and Davis said equipping all of them with RFID bag-sorting systems would require "a significant capital expenditure."

Nonetheless, Delta plans to continue exploring the technology. Rary said it has received tentative approval from the Transportation Security Administration to run another test in January using RFID tags made by Alien Technology Corp. in Morgan Hill, Calif. The first test, done in conjunction with the TSA from Oct. 23 through Nov. 15, involved tags supplied by Matrics Inc. in Columbia, Md., and SCS Corp. in San Diego.

Rary said the second one will give Delta a chance to try different methods of deploying tags, including the use of better printers to write bag-routing data onto RFID chips that are embedded in standard bar code labels. The airline's goal is to develop a bag-tracking system with a "zero mishandling rate," he added.

High Success Rates

Phil Heacock, director of advanced sortation technology in the Louisville, Ky., office of FKI Logistex Group Ltd., said that with one exception, the RFID bag-tracking system in Jacksonville provided read rates well above 99%. Scanners on the bag belts inside the terminal averaged 99.8%, and the ones on aircraft belt loaders had a success rate of 99.9%, Heacock said. FKI Logistex Group served as systems integrator for the test.

RFID scanners mounted on universal load devices, which automatically load containers of bags on to planes, averaged 96.7% accuracy. Heacock said the containers are made of metal, which impedes radio signals. Coating their interiors with a material that will better reflect radio waves could help improve accuracy, he added.

Heacock said that Delta modified a standard bag-tag printer to capture data normally used to print bar codes. The information was then written on to RFID devices inserted into standard luggage tags. RFID readers tracked the progress of items through the airport's bag-handling system, including the explosives-detection machines that are operated by the TSA.

EXPLOSIVES DETECTOR scans a bag with an RFID tag in Jacksonville, Fla.

The aircraft loaders were also equipped with RFID readers and were hard-wired to ruggedized computers, which used 802.11b wireless LANs to transmit data to Delta's back-end baggage systems.

Getting the funding needed to install RFID bag-tracking systems can be a challenge now, said Gene Alvarez, an analyst at Meta Group Inc. But he added that he expects the technology to eventually become a standard throughout the airline industry. 43686

MORE USERS

UPS, American Express are also working with RFID technology:

QuickLink 43672
www.computerworld.com

PeopleSoft Ties Its Apps To J.D. Edwards' Software

Connectors link product lines, but users may need to buy new licenses

BY MARC L. SONGINI

Looking to deliver on the promised benefits of its acquisition of J.D. Edwards & Co., PeopleSoft Inc. last week released integration links that are designed to let users exploit functionality from both companies' lines of business applications.

But users will have to buy new application licenses to take advantage of the packaged connectors if they don't already run software from both PeopleSoft and J.D. Edwards. PeopleSoft said the next step in its integration plan is to transfer technology between the product lines, but it didn't disclose a schedule for doing so.

The licensing issues are a concern for Irving Tyler, CIO at Conshohocken, Pa.-based Quaker Chemical Corp., which uses J.D. Edwards software. The integration work done by PeopleSoft is a good thing, Tyler said. "However, it's confusing," he added. "Things are all moving about, and we're not sure what products are which and how they apply to the licenses we already have."

Tyler said he will have to meet with PeopleSoft to get a better grasp of what's available from an integration standpoint, how it can be used and the software licensing ramifications.

More Technology

PeopleSoft this week will announce three professional services automation tools:

- A program management module that will let users develop a repository of all data related to a services project.
- A [illegible] interface designed to [illegible]
- A [illegible] for creating project proposals, [illegible]

Pleasanton, Calif.-based PeopleSoft initially is offering a set of seven connectors that integrate specific modules in its PeopleSoft Enterprise and EnterpriseOne application suites, which were known as PeopleSoft 8 and J.D. Edwards 5, respectively, prior to the July merger.

For example, PeopleSoft has linked its strategic sourcing software to the procurement application developed by J.D. Edwards. That means EnterpriseOne users who have deployed the procurement tools at various manufacturing plants now can aggregate their purchases of materials and supplies on a global basis, said Rick Bergquist, PeopleSoft's chief technology officer.

The integration rollout hews to a road map that PeopleSoft officials laid out in September [QuickLink 41094]. Other connectors tie together order processing and inventory management applications as well as finance and human resources modules.

In addition to the links, PeopleSoft said users can consolidate data from EnterpriseOne and J.D. Edwards' older World applications into its data warehousing software and use its Enterprise Performance Management tools to analyze the information.

PeopleSoft is taking some good first steps and appears to be picking up the pace of its integration efforts, said Barry Wilderman, an analyst at Meta Group Inc. In particular, he cited PeopleSoft's support for warehousing data from all of its business application suites.

But Wilderman cautioned that different metadata formatting approaches may prevent J.D. Edwards users from taking full advantage of PeopleSoft's analytic applications. He also advised IT managers to work with PeopleSoft to find out how seamless the application-to-application integration is. 43655

PEOPLESOFT MUST PAY

Arbitrators tell PeopleSoft to pay a disgruntled J.D. Edwards customer more than $1.8 million over a failed software rollout:

QuickLink 43664
www.computerworld.com

BRIEFS

Kodak Shifts CIO, Names IT Chief

Eastman Kodak Co. named Mark Gulling, formerly its CIO, to head a new global shared-services unit that will consolidate operations such as call centers and parts of the company's finance and human resources departments. Kim VanGelder, who was director of IT at Kodak's digital and film imaging systems unit, will be CIO and report to CEO Daniel Carp.

EDS Names Former Oil CIO as Exec VP

Electronic Data Systems Corp. has hired David Clementz, who retired as CIO of ChevronTexaco Corp. in July, to manage its outsourcing data centers and the facilities where it develops software for its IT services customers. As executive vice president of service delivery, Clementz will head one of the three operating units that EDS created in a reorganization last June.

ING U.S. Outsources Tech Ops to IBM

ING U.S. Financial Services, an Atlanta-based unit of ING Groep NV, said it has signed a seven-year, $600 million outsourcing contract with IBM. The deal calls for IBM to manage ING U.S.'s IT infrastructure, including its data centers, networks and help desk operations. ING said that about 300 of its IT workers will shift to IBM as part of a transition that began last week and is due to be completed in April.

Short Takes

IBM announced that it has acquired GREEN PASTURE SOFTWARE INC., a developer of document management software in Corvallis, Ore., for an undisclosed price. . . . Linux creator LINUS TORVALDS said in an e-mail message to the Linux-kernel mailing list that Version 2.6 of the open-source operating system's kernel is ready for production use.

MARK HALL ■ ON THE MARK

IT Lets Microsoft Pocket Ill-gotten Gains . . .

. . . by not filing for product vouchers from the settlements won in states' courts. In California, for example, up to **15 million businesses, organizations and individuals qualify,** but a mere 300,000 have applied so far to get the reimbursement, says Howard Yellen, CEO of Settlement Recovery Center LLC in San Francisco. Companies that negotiated contracts directly with Microsoft are excluded from the agreement.

But most companies bought through manufacturers, value-added resellers or down at the local Office Depot, and they all qualify. The settlement [QuickLink 40158] covers Microsoft operating systems and applications sold from 1995 through 2001. While Yellen says he can understand that an individual might not want to dig through his files to find a receipt for his Windows 95 upgrade, which the courts figure Microsoft overpriced by $29, it's just plain silly for "IT to sit on their hands" when they can collect. And big, in some cases. Yellen estimates that companies that barely upgraded at all during the seven-year period can still average $100 per user. For those that went through a steady upgrade process, it might be as high as $250 per user. The average, he says, runs about $165. The vouchers are good for most high-tech gear, **not just more Microsoft products.** Routers, Macintoshes, Sun workstations and even Linux laptops — you can go shopping. But the **right to file a claim expires** on March 15, giving you less than three months to get in line. Microsoft doesn't believe you'll bother. That's why the company has allocated only about $800 million to cover the California agreement, and it's doubtful that all of it will be spent. Why? "IT managers think it's a pain in the neck," explains Yellen. Naturally, his company is willing to come to your rescue, but **as Humphrey Bogart's cynical Rick told Peter Lorre's character** in *Casablanca*, "For a price, Ugarte, for a price." In Yellen's case, it's 30%, but presumably without the dead German couriers. What that 30% gets you is a guarantee that your claim will be filed on time and correctly. And Settlement Recovery Center doesn't get a nickel unless, and until, you do. Even if you don't use its services, Yellen says you had better get off the dime. "It's nuts not file a claim," he concludes. **"It's free money."** ■ While I'm on the topic of money, Silicon Valley startups think **next year might be a good time to cash in.** Salesforce.com Inc. has filed SEC documents stating its intent to go public next year. The San Francisco-based online CRM provider may be the second-most-anticipated initial public offering in 2004 behind Mountain View, Calif.-based Google Inc., which is rumored to be considering offering its stock directly to buyers over the Internet. Another IPO in the new year may come from security appliance maker ServGate Technologies Inc. in nearby Milpitas, Calif. ■ No word on whether Covalent Technologies Inc. thinks going public is in the cards for 2004, but the San Francisco company has found a way to make nice bundles of money — **selling proprietary software to manage open-source** technologies. Marketing Vice President Jim Zemlin says 130 of the Fortune 500 so far have bought the Covalent Application Manager, which uses lightweight agents to report on the health of everything from Linux and MySQL to JBoss and Apache. Covalent will add Postgres, a popular open-source database, in the first half of next year, and it's also taking a close look at adding support for Bricolage, an open-source content management product. Zemlin says he's bullish about the near future because "it's only after IT builds out all the open-source that they realize it's got to be managed." D'oh! ■ Jeff Silva, co-founder and vice president of Maxxan Systems Inc. in San Jose, says there are **two hot areas in SAN management** at the moment: data replication and virtual tape libraries. And that's just what Maxxan will offer its SAN management product users beginning this week with Version 4.0 of IPStor, which it resells from from FalconStor Software Inc. in Melville, N.Y. Silva says data replication demand is being driven by companies under the Sarbanes-Oxley gun; the virtual tape libraries offer a way to transition data from disk to "tape" without losing the speed of data recovery that disk-to-disk gives you. And you still get to use your current tape-backup program. **43660**

NetWeaver Plug-in Due

LogicLibrary Inc. in Pittsburgh has inked a deal with EPAM Systems Inc. in Princeton, N.J., to port its Logidex developer tool for application life-cycle management to SAP AG's NetWeaver development framework. Logidex already runs in the Visual Studio .Net and Eclipse programming environments.

HP Will Add 2.5-in. Drives to ProLiant Line

BY LUCAS MEARIAN

Hewlett-Packard Co. plans to put 2.5-in. disk drives with enterprise-class features in its ProLiant servers next year and later will add the space-saving technology to its disk subsystems and arrays.

Fujitsu Computer Products of America Inc. last week announced that HP has started testing its 2.5-in. drives, which use the Serial Attached SCSI interconnect and support data transfer rates of up to 300MB/sec. In addition, Seagate Technology LLC said it will deliver 2.5-in. drives to HP and other systems vendors during the first half of 2004.

HP will be able to put three of the new drives in the same amount of space that's now occupied by one 3.5-in. model, said Jeff Jenkins, vice president of server storage and infrastructure. That should let HP increase storage capacity and data throughput in servers and disk arrays while reducing the size of the boxes, he said.

The 2.5-in. technology is expected to debut in the ProLiant line in the second half of 2004, Jenkins said. HP then plans to roll out multiple-disk enclosures and modular arrays using the smaller drives in 2005 and 2006, respectively.

Jay Morgan, storage manager at Safelite Autoglass Inc. in Columbus, Ohio, said he likes the idea that smaller drives could save space in his ever-growing data center. But, Morgan added, he's concerned that stacking servers with multiple 2.5-in. drives might create hot spots in the data center and force him to reconsider the amount of weight the floor needs to support.

IDC analyst Dave Reinsel predicted that 2.5-inch drives will account for 2% of the enterprise-class drive market next year. The switch to the smaller drives "will be a fairly gradual thing," he said. **43675**

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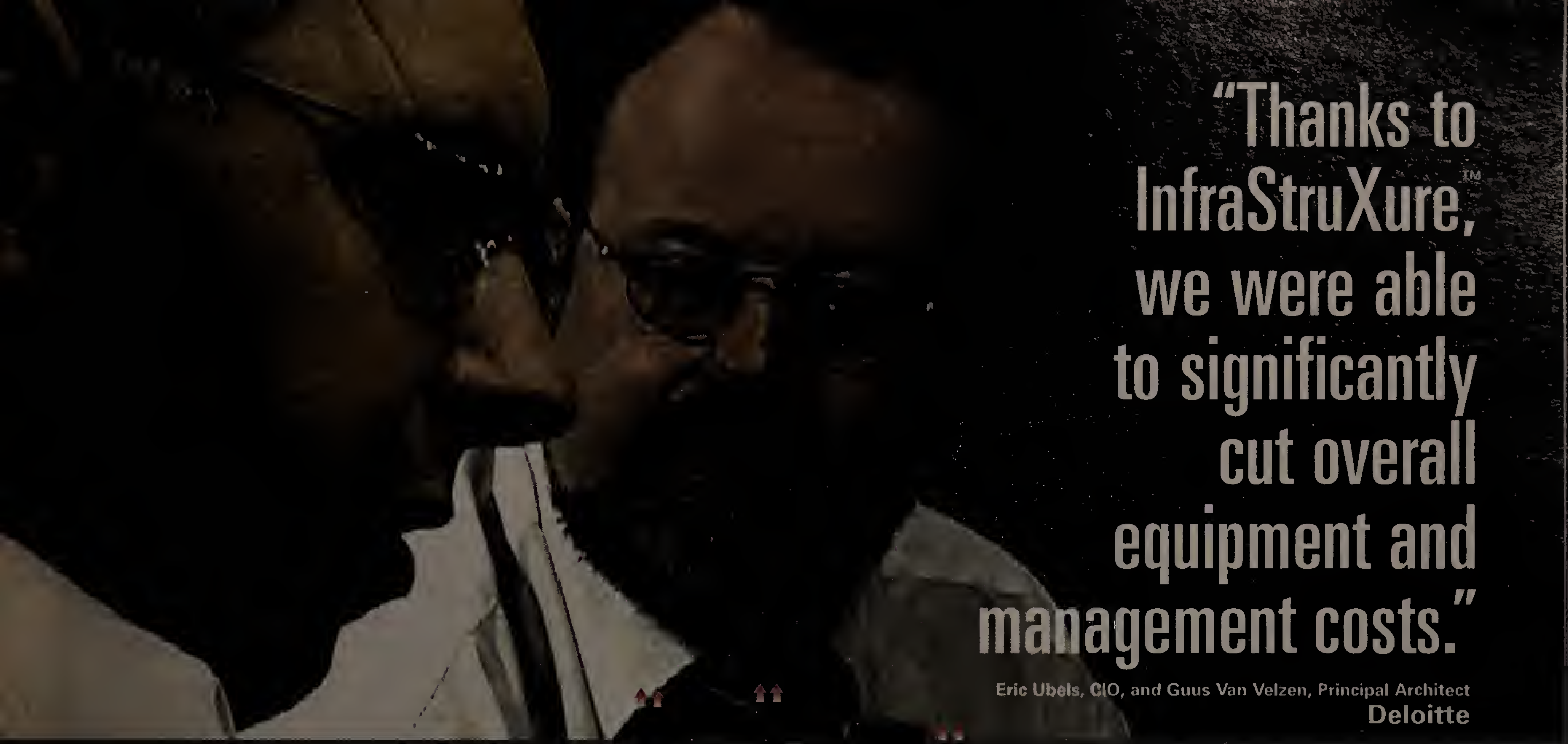

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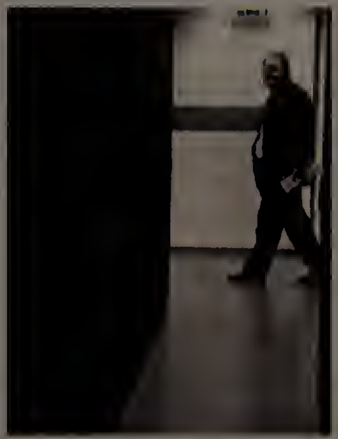

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Army's IT Unit Still Untested, Despite Role in Saddam Nab

Success didn't demonstrate ROI of spending on 'digitized' unit, experts say

BY DAN VERTON
WASHINGTON

THE U.S. Army's 4th Infantry Division — the first so-called digital division — may have played a key role in the capture of Saddam Hussein. But military officials and analysts last week credited low-tech preparations and human intelligence for the operation's success. They said the ongoing Iraqi insurgency will be the real test of the Army's IT investment strategy.

Hussein's capture came after repeated raids in and around Tikrit, Iraq, produced a wealth of information from captured Saddam loyalists, and it shouldn't be seen as justification for any of the IT systems deployed by the Army, said military analysts.

"It would be foolish to justify spending on the Army's IT investment in digital divisions simply because of the 4th Infantry Division's role in the capture of Saddam," said James Garrett, a military analyst at Globalsecurity.org, a consulting firm in Alexandra, Va. "While the technology undoubtedly assisted in the command-and-control efforts of the operation, U.S. forces probably could have captured Saddam even if the equipment hadn't been available."

"I strongly believe that [Hussein's] capture was a combination of some very good and timely [human intelligence] on the ground and some persistence," said Bill Crowell, a former director of the National Security Agency.

Digitization efforts are really designed to help troops visualize where they and their fellow soldiers are positioned and to coordinate operations, Crowell said. In contrast, he said, "this operation was against a specific target by a limited number of armored vehicles."

The Army started its multibillion-dollar digitization effort in the late 1990s. The 4th Infantry Division was selected as the proof-of-concept unit that would test and be the first to field a slew of new computerized command-and-control systems for its vehicles.

The division didn't see major combat in Iraq because it was deployed to Turkey, which didn't allow the U.S. to launch operations from its soil. But analysts said that the current insurgency being waged against U.S. troops by Hussein loyalists and outside forces will continue to measure the return on the Army's IT investments.

Central to the 4th Infantry Division's capabilities is a $20 billion program known as the Army Battle Command System, a network of applications that provides real-time intelligence and weather data to computer terminals mounted in Army vehicles.

The system provides graphic depictions of the locations of friendly forces and allows them to communicate with one another and with senior commanders. It also displays the locations of known enemy units.

John Hillen, general manager for defense and intelligence at Fairfax, Va.-based American Management Systems Inc. and a former special operations soldier who served in Operation Desert Storm, said while it's true that the 4th Infantry Division's new IT systems haven't been "battle-tested in the classic sense," the Army can now assess operations during a phase of the war that has proved to be more perilous than the initial battle. 43681

THE ASSOCIATED PRESS

U.S. SOLDIERS in Baghdad watch a video following Saddam's capture.

Vendors Vow to Develop Common Interface for Server Management

Rivals team up on proposed data center standard

BY MATT HAMBLEN

A group of top hardware and software vendors last week joined together to begin creating a standard user interface for managing servers, a move that's aimed at reducing the complexity and cost of administering data center systems.

The vendors, led by Dell Inc., Hewlett-Packard Co., IBM and Intel Corp., announced the creation of a working group within Distributed Management Task Force Inc. (DMTF), a Portland, Ore.-based organization that developed the Common Information Model (CIM) and Web-Based Enterprise Management specifications.

Other companies that are taking part in the effort include Microsoft Corp., Oracle Corp., Sun Microsystems Inc., Advanced Micro Devices Inc. and OSA Technologies Inc.

The working group plans to define a CIM-based command-line interface that systems administrators could use to locally and remotely manage servers made by various vendors, said Winston Bumpus, the DMTF's president.

Bumpus said rival server vendors currently offer their own management interfaces, requiring IT workers to manage each brand separately or write code that connects different systems for management purposes.

"Data centers have got racks of hardware, and it's hard to manage this stuff," he said. "We get the sense this is a real pain point for customers."

Several IT managers agreed that server management can be a painful process. But they said they're skeptical about the working group's plans, partly because data center management is inherently complex.

"If this creates open standards, low costs and better management tools, then it has value, [but] I'm not convinced that this is the intent," said Steve Bandrowczak, CIO at air freight carrier DHL Worldwide Express Inc. in Scottsdale, Ariz. Bandrowczak said that when standards are created, individual vendors can "still drive very specific versions that cause additional costs" for users.

As described by the DMTF, the proposed interface standard "sounds like somebody saying, 'I'm against sin and in favor of motherhood.' So how could you be against this if it comes to fruition?" said Philip Brody, chief technology officer for the Clark County School District in Las Vegas. "It could make life easier for everybody, but you know — promises, promises. It sounds good and desirable, but the devil is in the details."

Both Brody and Bandrowczak said their IT staffs have to manage many brands of servers. "It's very complex to support multiple vendors with multiple storage-area network solutions and operating systems," Bandrowczak said.

The new working group set a July 1 deadline for proposing its first specifications to the DMTF. Bumpus said the common interface could eventually be moved beyond servers to support networking devices such as switches and routers as well as PCs. 43661

The DMTF Server Management Working Group

- Held its first face-to-face meetings last week and plans to complete an initial set of specifications by July.
- Will evolve the CIM specification to cover new types of hardware, such as blades and systems running server virtualization software.
- Is considering putting its command-line interface on the BIOS chip inside servers and developing an external proxy for systems that don't have embedded controls.

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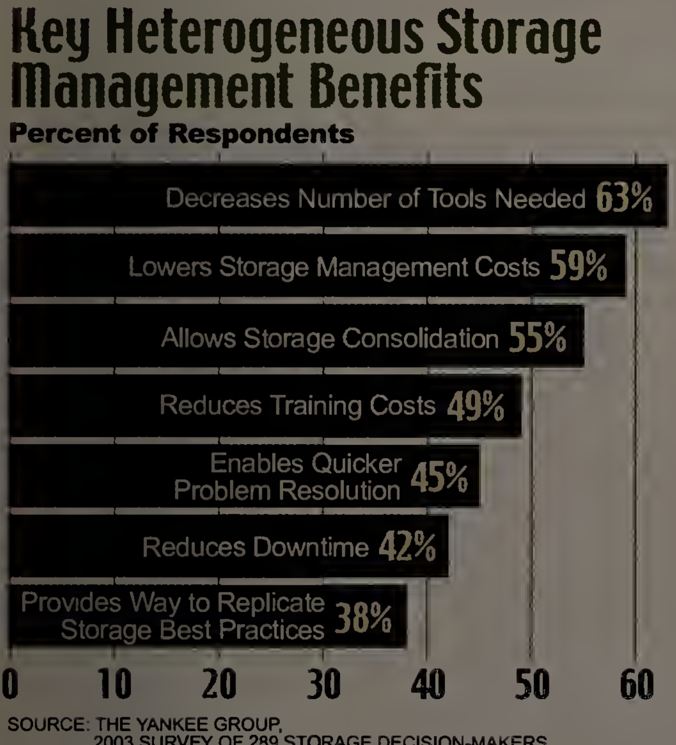
A Sound Storage Investment

Yankee Group report finds users of VERITAS storage management software realize 3-year ROI of at least 200%.

As storage-related expenses chew up ever-larger amounts of IT budgets, IT executives looking for ways to contain storage costs are increasingly turning to a heterogeneous management approach to help them rein in costs while improving performance.


Key Heterogeneous Storage Management Benefits

Percent of Respondents

SOURCE: THE YANKEE GROUP,
2003 SURVEY OF 289 STORAGE DECISION-MAKERS

VERITAS delivers ROI

Customer	3-year ROI	Payback period
Government agency	204%	15 months
Service provider	201%	11 months
Financial services company	205%*	13 months*

* Projected

SOURCE: THE YANKEE GROUP

Download the full report

The Yankee Group report, **"Storage Management Return on Investment from Deploying VERITAS Software"** is available free online. The report contains detailed financial analyses of the three case studies mentioned here, to help you make your own business case for heterogeneous backup software.

Go to: www.veritas.com/offer and enter reference code 4391.

That is but one of the key findings of a recent study by The Yankee Group on storage management return on investment. The Yankee Group, a research firm based in Boston, surveyed 289 IT executives at Global 2000 firms for the study, and also homed in on three users of VERITAS Software storage management tools to determine total cost of ownership and ROI figures for their VERITAS deployments.

The results present a rather dramatic case for the benefits of a heterogeneous storage management approach: A government agency saw an ROI of 204 percent, a service provider realized an ROI of 201 percent and a financial services company expects a return of 205 percent over three years from their respective VERITAS storage management software deployments. The three companies saw a payback period of 15 months or less, according to a detailed financial analysis Yankee Group conducted for each of the three customers.

"All three sites also experienced a marked decrease in the labor costs associated with managing their storage operations, reducing the time necessary to handle routine storage management tasks and vastly improving their ability to manage complex storage environments," according to the study, written by Yankee Group senior analyst Jamie Gruener and sponsored by VERITAS.

Storage budgets make up 10 percent to 20 percent of overall IT infrastructure budgets, prompting more companies to establish separate storage groups within their IT organizations, the study says. Some 48 percent of the companies Yankee Group surveyed have separate storage groups. With that kind of increased emphasis on storage comes more scrutiny of storage costs and interest in measuring the value of storage investments.

Increasingly, enterprises are finding that the ability to manage a multi-vendor storage environment from a common platform brings numerous benefits, including improving productivity for IT administrators. The strategy also reduces vendor lock-in, enabling customers to select management software independently of their hardware platform, and to select the hardware that best fits each specific backup requirement. Additionally, the strategy reduces downtime, cuts deployment time and streamlines management processes, the report found.

"The bottom line: it's easier and more cost-effective when one can manage storage in a heterogeneous manner," the report states, noting the strategy is employed by more than 50 percent of enterprises today. "Pursuing heterogeneous storage management is a strategic imperative this year and beyond."

Both the larger, 289-user survey and the in-depth interviews with the three VERITAS customers showed a core requirement in the storage management buying decision is improving administrator productivity. "Whether it is storage provisioning, managing storage capacity and the storage network, or attending to backups, storage decision-makers describe how adopting new storage management tools has reduced mundane/routine tasks for administrators significantly," the report says.

Yankee Group's analysis of the three VERITAS customers, who provided detailed financial information on the condition that they not be named, illustrates the savings to be had.

The government agency customer operates a main data center with storage growth rates of 100 percent per year. It has 52 UNIX servers running a mix of IBM AIX and Sun Solaris. Using VERITAS NetBackup to back up the servers, and VERITAS Foundation Suite for volume management, the agency estimates it reduced time spent on storage management tasks by 25 percent. Additionally, NetBackup enabled the agency to use a tiered backup configuration and consolidate storage to four tape libraries, eliminating the need for an estimated 11 tape libraries, the report says.

VERITAS' service provider customer, which offers application hosting services for enterprises, had even more stringent storage requirements. The company operates two data centers with a mix of 900 Windows, Linux and UNIX servers with 63TB of direct-attached storage and five SANS with 75 TB of capacity. Using a combination of VERITAS Cluster Sever, VERITAS Database Edition and NetBackup, the company was able to increase uptime to 99.999 percent — the "five nines" level that telephony companies strive to meet. Its 11-month payback period was the shortest of the three customers Yankee Group interviewed.

The third case study focused on a financial services company with a highly transactional environment that includes 20 Sun Solaris servers, a SAN supporting about 10 TB of data and a mix of Hewlett-Packard, EMC and Hitachi Data Systems storage systems. Using the VERITAS Foundation Suite, VERITAS SANPoint Control and VERITAS SANPoint Foundation Suite HA, for failover, the company increased its capacity utilization from 25 percent to 85 percent. It also increased administrator productivity by about 50 percent, the report says.

In its conclusion, the Yankee Group report says customers looking at storage management solutions should consider a number of issues, including the ability to demonstrate productivity improvements as well as a heterogeneous and centralized approach.

"As the results of this ROI case study indicate, VERITAS software can provide significant financial benefits to customers deploying storage management software," the report says. "At the highest level, VERITAS has demonstrated it can save customers significant costs associated with hardware purchase avoidance, reduced labor costs due to higher productivity, as well as reduced downtime costs."

BRIEFS

Cisco Warns Users Of Firewall Flaws

Cisco Systems Inc. issued warnings about security holes that could be used to launch denial-of-service attacks against its PIX firewall devices and the firewall software in its Catalyst 6500 and 7600 series switches. Cisco said users can get free upgrades to new software releases that are designed to fix the problems.

Oracle Sees Rise in Revenue, Income

Oracle Corp. reported an 8% year-over-year increase in revenue and a 15% jump in profit for its second quarter, which ended Nov. 30. Oracle said sales in North America bounced back following a sales force overhaul.

BY THE NUMBERS

	REVENUE	NET INCOME
Q2 FY04	$2.5B	$617M
Q2 FY03	$2.3B	$535M

Microsoft Sets Plan To End Win 2k Sales

Microsoft Corp. said it will phase out sales of Windows Server 2000 over a two-year period starting April 1. After that date, the software won't be available through Microsoft's volume-licensing programs. Systems vendors will stop selling Windows 2000 next November, although users will be able to get copies until April 2006 by licensing Windows Server 2003 and downgrading. [For more details, go online: QuickLink 43647].

Short Takes

Ed Zander, who resigned as SUN MICROSYSTEMS INC.'s president in July 2002 and has been working at an investment firm, was named chairman and CEO of MOTOROLA INC. . . . Stockholm-based airline and travel company SAS AB and COMPUTER SCIENCES CORP. signed an IT outsourcing deal that could be worth $1.5 billion over nine years.

Continued from page 1

EMC/VMware

250TB of storage across multivendor storage systems from IBM, Hitachi Data Systems Corp. and EMC. Stevenson said EMC's goal of virtualizing the server stack in order to run multiple instances of storage management software without requiring an additional server piques his interest.

Stevenson, like many storage administrators, believes that storage management is clunky and that reallocating or resizing storage resources for business applications takes too much time and disrupts operations.

"If a virtualization technology can help us enable more storage consolidation without host downtime or impact, I'm interested," he said. But Stevenson also criticized most virtualization technologies as being too narrow in scope and as locking "users into a particular vendor's product, which is not enabling virtualization on a heterogeneous level."

VMware user Tony Adams, a technology analyst at J.R. Simplot Co., a $3 billion agribusiness corporation in Boise, Idaho, said, "VMware excels in both their technology and their customer relations. It's my understanding that EMC is also very customer-focused, so if they can maintain or even strengthen VMware's technical position, then existing enterprise customers should be in good shape."

VMware faces competitive pressure, particularly from Microsoft Corp., which gained virtualization technology in its Connectix Corp. acquisition earlier this year [QuickLink 42840]. By becoming part of EMC, Palo Alto, Calif.-based VMware gains the backing of a "very large, well-capitalized" company with a lot of influence in the data center, said Gordon Haff, an analyst at Illuminata Inc. in Nashua, N.H.

EMC, meanwhile, is a direct competitor in the storage arena with IBM, a company with which VMware has a close partnership. Haff said he doesn't expect any radical changes in that partnership, but IBM could become cautious in the future. EMC officials, citing the differences in product lines, said they expect no conflict.

In a statement, IBM said it will still work "closely with VMware and will continue to complement our virtualization offerings for Intel systems with partner technologies."

EMC maintains that its own and VMware's product lines will benefit from the acquisition. For instance, EMC's Symmetrix Remote Data Facility allows one storage array to mirror in real time an array in another data center. If there's a need for the application to switch from the primary to the secondary site, there may be some application downtime.

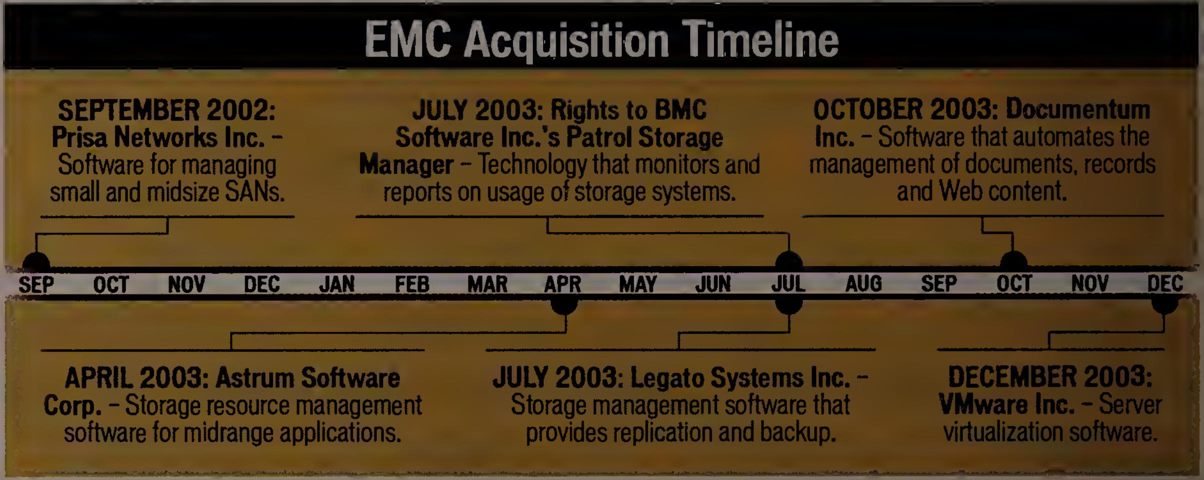
But by integrating VMware's storage and server virtualization capabilities, EMC said it will have a technology that allows an application to switch to a different array without downtime. "That is one of the first things we will be working on," said Chris Gahagan, EMC's senior vice president of storage infrastructure. That technology is expected to be ready a few months after the sale is completed, he said.

William Hurley, an analyst at Enterprise Application Group in Portland, Ore., said VMware gives EMC an operating platform on which to run the many management applications it has obtained over the past year through acquisitions.

Hurley added that while those management applications provide EMC with a greater opportunity to control more of the data center stack in an automated fashion, the company will fall short of its vision to offer users a policy-driven technology that controls data storage from cradle to grave if it doesn't integrate those products into a single management suite.

"[EMC has] to be able to address the fact that they do have IBM and other diversified vendors . . . helping customers achieve a lower overall business TCO, as opposed to selling them pieces of an overall larger technology puzzle," Hurley said. **43864**

EMC Acquisition Timeline



SEPTEMBER 2002: Prisa Networks Inc. – Software for managing small and midsize SANs.

JULY 2003: Rights to BMC Software Inc.'s Patrol Storage Manager – Technology that monitors and reports on usage of storage systems.

OCTOBER 2003: Documentum Inc. – Software that automates the management of documents, records and Web content.

APRIL 2003: Astrum Software Corp. – Storage resource management software for midrange applications.

JULY 2003: Legato Systems Inc. – Storage management software that provides replication and backup.

DECEMBER 2003: VMware Inc. – Server virtualization software.

BizTalk Server Ship Date Slides to Next Year

BY CAROL SLIWA

Microsoft Corp. last week announced that packaging and pricing won't change for the upcoming release of its BizTalk Server software, but the company has yet to pinpoint the product's release date.

Even though the new version is called BizTalk Server 2004, it had been scheduled to ship by the end of this year. Eron Kelly, a lead BizTalk Server product manager, said the product is now expected to be released early next year. "We won't ship without customers telling us it's ready," Kelly said, noting that about 250 users are testing the software. "We really just want to make sure it meets all their expectations," Kelly added.

The third major release of BizTalk Server — software designed to help users integrate applications and automate business processes — will add business-activity monitoring and a scalable rules engine.

It will also ship with Microsoft's Visual Studio .Net tools, enabling developers to work in the same environment that they're accustomed to when building general Windows-based applications.

The 2004 version will also include copies of Microsoft Office InfoPath 2003, a new product that lets users create XML-based forms and submit them to XML-enabled systems. Kelly said customers will get one license of InfoPath for each per-processor BizTalk license they buy. To use InfoPath, the product would also need to be running on the client, he added.

Pricing will remain the same as it was for BizTalk Server 2002, according to Kelly. The Enterprise Edition sells for $25,000 per processor, the Standard Edition is $7,000 per processor, the Partner Edition is $1,000 per processor, and the Developer Edition costs $750.

Standard and Partner Edition customers will get some extra benefits. The Standard Edition currently allows connections to 10 trading partners and five internal applications; that will change to 20 trading partners and 10 internal applications with BizTalk Server 2004. The new Partner Edition will allow connections to three trading partners and three internal applications, up from two of each with the 2002 version. **43658**

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Ten Stories That Rocked (OK, Touched) Your World

BY MARC FERRANTI

After a three-year roller-coaster ride, the IT industry settled down a bit in 2003. The year seemed to provide a respite from history-making corporate scandals, monopoly-busting, and the exhilarating but scary boom-and-bust cycle.

Not that anyone was operating on cruise control, as this roundup makes clear. Here are the top 10 IT stories of the year, not necessarily in order of importance:

Offshore Outsourcing: One Worker's Gain Is Another's Loss

■ Stories about U.S. companies outsourcing work to India have been reported for years. But this year it became apparent that Romania, Bulgaria, Russia, China, Ghana, the Philippines and dozens of other countries are also clamoring for, and getting, business from the U.S. The value of IT services provided to U.S. businesses from offshore labor will double to $16 billion next year and then almost triple to $46 billion by 2007, according to market research firm IDC. Forecasts such as this sparked fears that Western IT workers would face increasing competition and prompted politicians and trade unions to raise the specter of protectionism. **a2290**

Oracle, PeopleSoft and J.D. Edwards Star in Merger Drama of the Year

■ Legal battles also added to the drama of PeopleSoft Inc.'s acquisition of rival ERP software maker J.D. Edwards & Co. and its subsequent fight to ward off a hostile $5.1 billion takeover bid from Oracle Corp. Oracle, acting as spoiler of the J.D. Edwards deal, got hit with several lawsuits by its takeover target. The fracas is a milestone: The fragmented ERP market has been due for a shakeout, and the Oracle/PeopleSoft bout may end up being just one of many battles, as a series of mergers leads to a new chapter in a business applications story in which there are far fewer characters. **a3320**

On-Demand Computing Message Besieges Users

■ You can call it "utility computing," or you can call it "adaptive computing," or you can call it "autonomic computing," or you can call it "mind-numbing vendorspeak." But whatever you call it, the on-demand computing message bombarded users relentlessly. IBM, Hewlett-Packard Co., Sun Microsystems Inc., Computer Associates International Inc. and Microsoft Corp. led the assault, attempting to gain mind share from IT professionals who are eager to boost efficiency and lower costs in their data centers. But users and analysts agree that a computing infrastructure that adapts to business needs is a long-term vision that will materialize only incrementally over the next decade or so. **40444**

Spam Grows From Annoyance to Major Political Issue

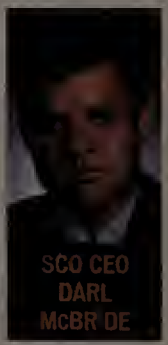
■ This year, spam was a cause célèbre for politicians in Europe and the U.S. In October, an opt-in directive came into effect for the 15 European Union member states. In the last few weeks of the year, the U.S. Congress followed suit by sending an opt-out antispam bill to President George W. Bush to sign. Squabbles over differences in approach gave way to agreement that unless some sort of an antispam crackdown also occurs in Asia, purveyors of unsolicited e-mail will find a haven there. **a3300**

Slammer and Other Worms Continue to Proliferate

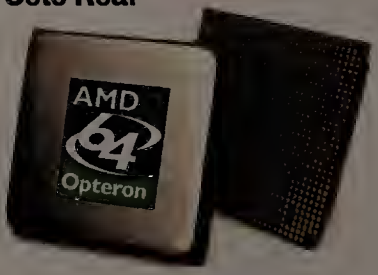
■ The year had just begun when Slammer hit the Internet, proving to be the fastest-spreading worm to date and reminding Internet users globally that security is still an unresolved problem. The good news is that most affected organizations said prompt reactions and new security technology prevented more widespread disruptions. The bad news is that security flaws in popular software will likely allow malicious hackers to continue to plague users. **a1280**

SCO Rocks the Linux Boat

■ Just when things appeared to be going great for Linux the world over, a wrench in the works alarmed the open-source faithful. When The SCO Group Inc. filed a lawsuit in March charging IBM with misappropriation of trade secrets, Linux users saw that the move involved more than a contract dispute. SCO asserts that IBM took proprietary Unix code and introduced it into the open-source community. This muddies the legal waters for open-source software users, some of whom believe that SCO's terms could restrict Linux users' ability to redistribute source code. **a3260**


SCO CEO DARL McBRIDE

64-Bit Computing Gets Real



■ While not as mainstream as Wi-Fi, low-cost 64-bit computing took a step toward prime time in 2003. Advanced Micro Devices Inc. played a key role in lighting a fire under the market for 64-bit computing, launching the Opteron chip in April and the Athlon64 processor in September. Since the chips run both 32- and 64-bit applications, AMD hopes to help customers hedge their investments in old technology and ease the transition to new applications. Though desktop users will have to wait for many applications, as well as for a 64-bit version of Windows that isn't expected until the second half of 2004, the stage is set for the average user to get the benefits of faster video encoding and better performance from complex applications such as computer-aided design. **43032**

Wi-Fi Goes Wild

■ While Wi-Fi "hot spots" had already started to spring up in public places last year, it wasn't until this year that you could count on finding them in coffee shops throughout most of the globe's major cities. Intel Corp.'s Centrino chip package, tailored for mobile computing applications, helped fuel interest in wireless computing. Meanwhile, new specifications such as 802.11g, combined with new smart-antenna technology, will boost Wi-Fi range and signal strength and undoubtedly further fuel the wireless revolution. **k1000**

PC Market Shows Signs of Life

■ After lying moribund for a year or so, PC shipments were forecast to grow more than 11% for 2003. That rate would mark double-digit growth for the first time since 2000. An expected surge in business spending in the U.S. helped push the forecasts up above 10%. Analysts are also starting to predict double-digit growth for 2004. **a3870**

Optimism Re-emerges

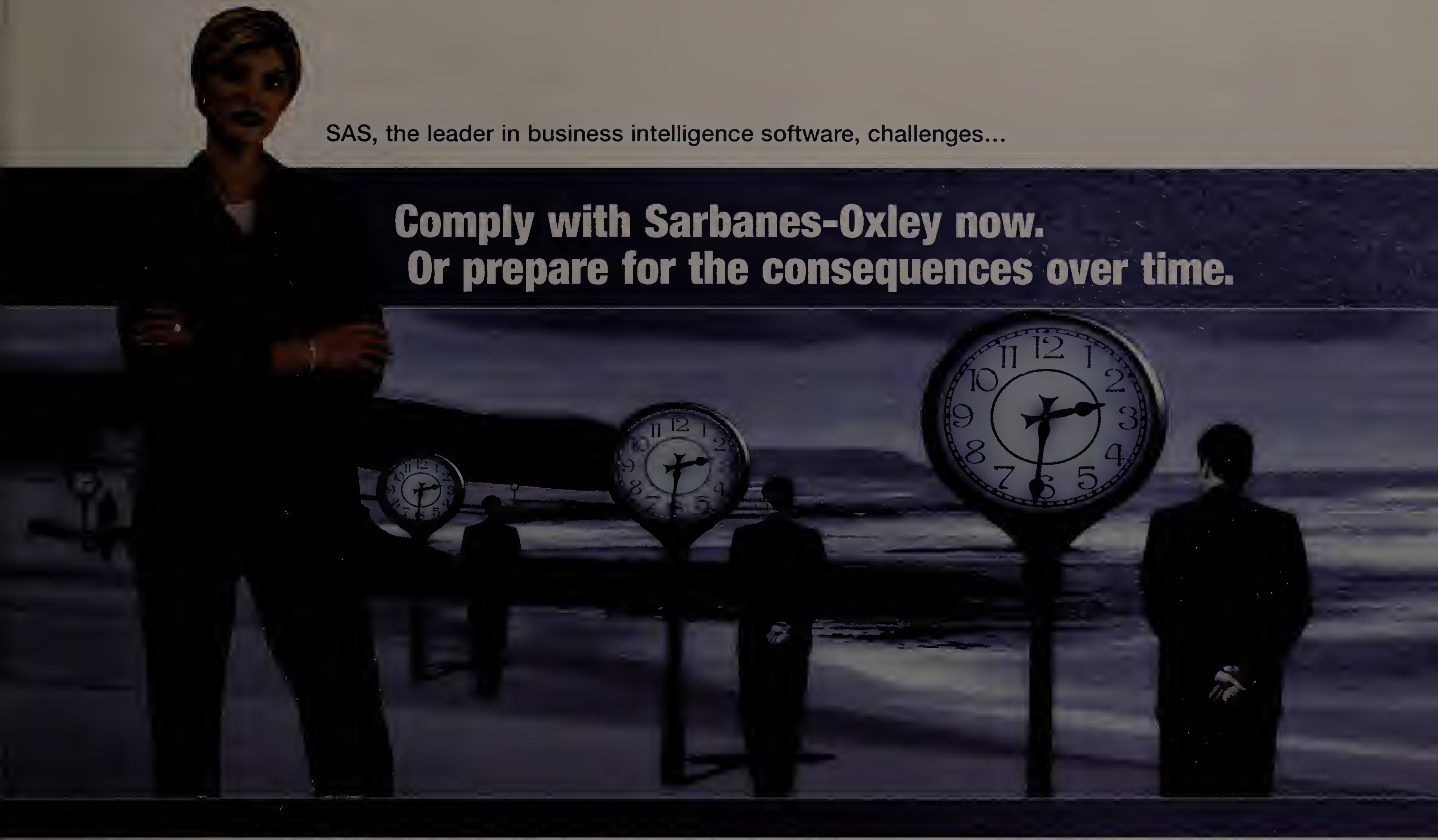
■ By the end of the year, rosy predictions for hardware joined upbeat economic news, including moves by the Nasdaq stock exchange to bring more technology stocks into its Nasdaq 100, as the index rose by more than 40% from 2002 levels. This gave a lift to the end of 2003, which in a sense was the year of the tech story that wasn't: Prognosticators' forecasts for an upturn in 2002 had been dashed, which had a dampening effect on the usual hype surrounding new products.

Now industry watchers are starting to talk up technology that emerged this year but might need a more robust buying climate to really take off. Look out for a resurgence in spending — IDC forecasts overall IT spending to grow 6% to 8% in 2004 — and for trends such as the increasing use of on-demand computing resources, low-cost commodity computing systems that incorporate Intel chips, adoption of Linux and a focus on regulatory compliance issues. **43607**

Ferranti is executive news editor of the IDG News Service. Don Tennant contributed to this story.

FAST FORWARD

For a compendium of stories on the IT outlook for 2004, visit our Web site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TOP 10

Recipients of High-Tech Lobby Money in 2004 Election Cycle

RANK	CANDIDATE	OFFICE	
1	Bush, George W. (R)	President	$1.2M
2	Dean, Howard (D)	President	$387,886
3	Kerry, John (D)	President	$350,750
4	Lieberman, Joe (D)	President	$229,720
5	Shelby, Richard C. (R-Ala.)	Senate	$112,110
6	Gephardt, Richard A. (D)	President	$106,200
7	Edwards, John (D)	President	$84,150
8	Clark, Wesley (D)	President	$73,800
9	Davis, Tom (R-Va.)	House	$71,500
10	Moran, Jim (D-Va.)	House	$52,234

SOURCE: CENTER FOR RESPONSIVE POLITICS, WASHINGTON

TOP 20

IT Vendor Contributors in 2004 Election Cycle

RANK	ORGANIZATION	AMOUNT	DEMS	
1	Microsoft	$702,660	50%	50%
2	Cisco	$161,374	48%	52%
3	EDS	$139,995	32%	68%
4	Intel	$132,595	44%	56%
5	Collazo Enterprises	$124,500	1%	99%
6	EMC	$123,000	5%	95%
7	Achievement Technologies	$101,000	84%	16%
8	IBM	$95,645	66%	33%
9	Siebel Systems	$89,500	45%	55%
10	Hewlett-Packard	$80,940	50%	49%
11	Gateway	$71,000	35%	64%
12	eBay	$60,250	41%	59%
13	Dell	$59,700	30%	69%
14	Oracle	$56,016	67%	33%
15	Perot Systems	$55,325	16%	84%
16	TechNet	$54,376	65%	35%
17	eScription.com	$52,000	100%	0%
18	Intergraph	$51,609	28%	72%
19	Texas Instruments	$51,400	18%	82%
20	Computer Associates International	$46,360	69%	31%

Note: 2004 election cycle data reported by Federal Election Commission Nov. 3, 2003. Total contributions: $5,587,973. Not all amounts total 100% due to indirect donations.

SOURCE: CENTER FOR RESPONSIVE POLITICS, WWW.OPENSECRETS.ORG

Continued from page 1

IT Lobbying

to five key lawmakers who have taken leadership roles on issues such as IT security regulation and federal IT acquisition policy (see chart below).

Those lawmakers are Sen. Susan Collins (R-Maine), chairman of the Senate Governmental Affairs Committee; Rep. Christopher Cox (R-Calif.), chairman of the House Homeland Security Committee; Rep. Tom Davis (R-Va.), chairman of the House Government Reform Committee; Rep. Zoe Lofgren (D-Calif.), who represents tech-dominated Silicon Valley; and Rep. Adam Putnam (R-Fla.), chairman of the House subcommittee on technology policy.

Putnam has threatened to introduce security legislation next spring if the private sector doesn't improve IT security on its own.

The IT vendor associations that have formed PACs include TechNet and the Information Technology Association of America (ITAA).

Those that haven't formed PACs but whose member companies have made sizable, independent donations to key lawmakers include the Business Software Alliance (BSA), the Electronic Industries Alliance (EIA), the Information Technology Industry Council (ITIC) and the U.S. Chamber of Commerce.

Some industry executives view the contributions as a way to gain access to Congress. The groups in question and the lawmakers they support, however, claim that the money doesn't set the agenda but supports candidates who share their philosophy about the roles of government and industry.

Dave Morin, a spokesman for Davis, said the IT sector supports Davis because of his belief that government should play an enabling role and not an inhibiting one when it comes to regulating the industry. "Companies and associations support members with the best policy," he said. "Chickens don't give money to Col. Sanders."

Bob Dix, Putnam's staff director and a longtime associate of Davis', said that "the reason people support [Davis] is not because he's in anybody's hip pocket but because they support his economic agenda."

Putnam has also asserted his independence, said Dix. During a Dec. 17 meeting of the Corporate Information Security Working Group [QuickLink 42668], Putnam made it clear that his committee wouldn't align itself with the agendas set by the industry working groups formed at the National Cyber Security Summit on Dec. 3 [QuickLink 43294].

Harris Miller, president of the Arlington, Va.-based ITAA, made no apologies for his organization's role in the political process. "ITAA makes PAC contributions to support members in both parties who see the future of the Internet based on competition, not regulation, and who advocate positions on issues we consider important to the health and vitality of the IT industry," he said.

TechNet, whose PAC has donated nearly $305,000 to lawmakers since 1998, didn't respond to requests for comment; the BSA and the EIA also didn't respond.

Shannon Feaster, a spokeswoman for the Washington-based ITIC, a lobbying group whose 29 member companies are some of the largest vendors in the IT industry, said that the ITIC doesn't give money to PACs.

ITIC member companies, however, have independently donated more than $85,000 to key lawmakers.

Andrea Hofelich, a spokeswoman for Collins, claimed that because the senator has focused mostly on the government's own IT acquisition programs, campaign contributions haven't been an issue. Collins "always approaches the issues with an open mind toward what's best for the taxpayer," she said. **43668**

Campaign Contributions: 1998 to 2004

	CONGRESSMAN				
IT ORGANIZATION	COLLINS	COX	DAVIS	LOFGREN	PUTNAM
TechNet	$0	$2,223	$3,500	$7,354	$0
Key TechNet Members	$13,000	$22,000	$44,750	$34,800	$0
ITAA	$0	$250	$4,286	$1,000	$0
Key ITAA Members	$8,500	$27,000	$67,250	$2,000	$500
BSA Policy Members	$0	$500	$7,000	$4,250	$1,000
Key EIA Members	$2,000	$0	$37,250	$3,000	$0
Key ITI Members	$16,500	$9,000	$43,368	$10,500	$6,000
U.S. Chamber of Commerce	$1,000	$0	$0	$0	$1,000
TOTAL	$41,000	$60,973	$207,404	$62,904	$8,500

SOURCE: CENTER FOR RESPONSIVE POLITICS, WWW.OPENSECRETS.ORG

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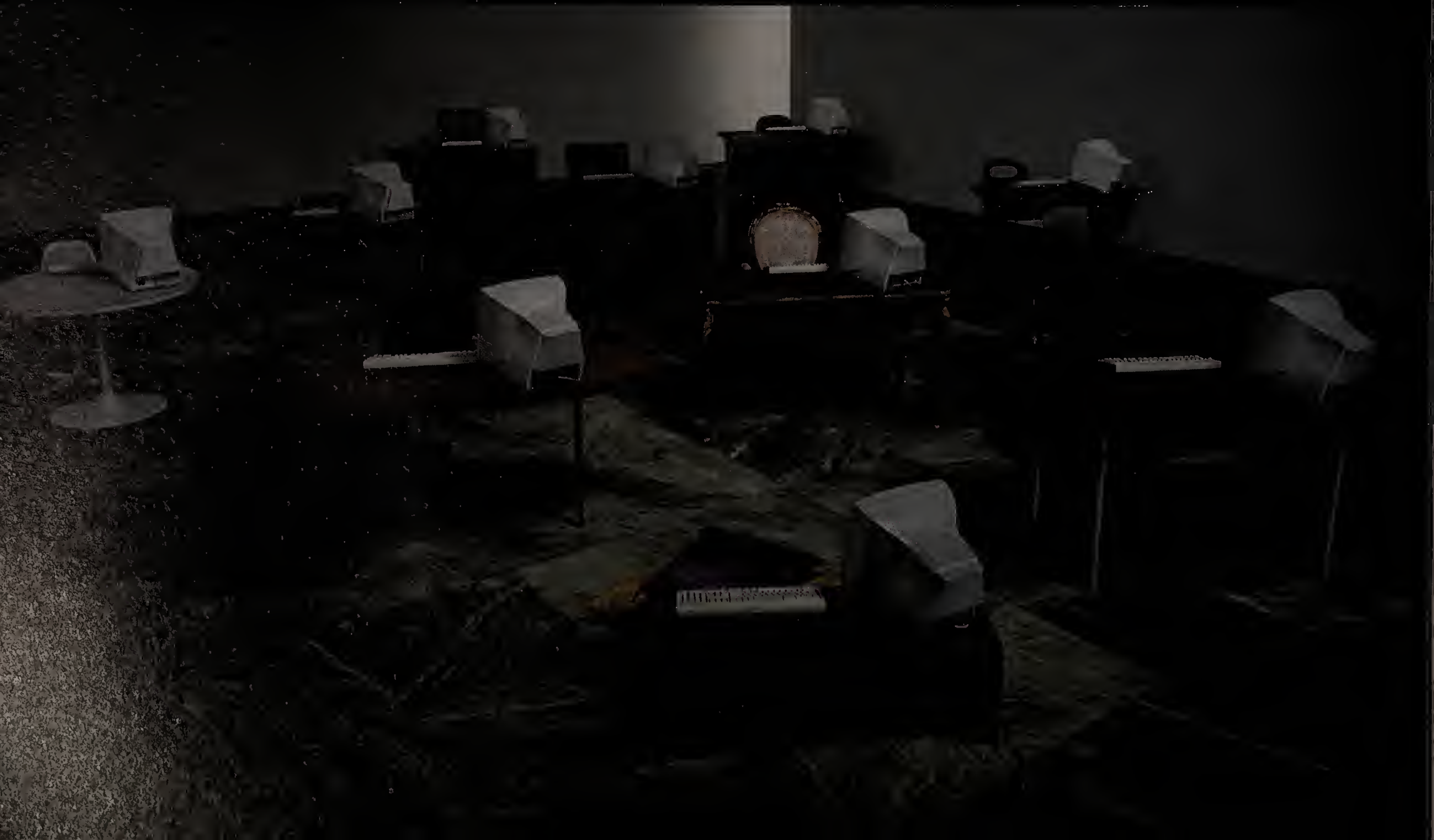

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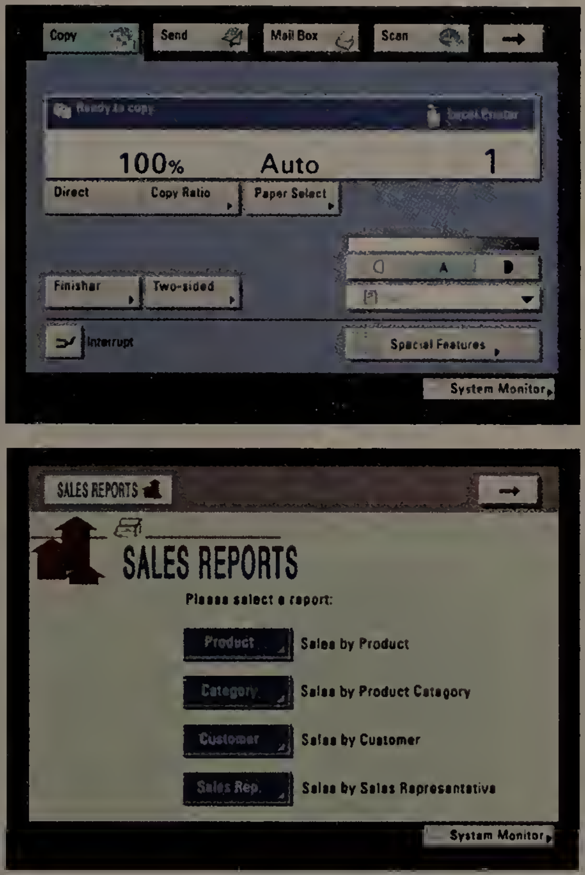

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MARYFRAN JOHNSON

Scrambled Priorities

THE DIRE NECESSITY of setting priorities has been on my mind ever since I stepped off an airplane last week and realized that I had done no Christmas shopping. This was a looming crisis of spectacular proportions, involving expectant friends and merciless family members in several states. They would be neither mollified nor impressed by my lame explanations of how the holiday season had somehow caught me unawares.

MARYFRAN JOHNSON is editor in chief of *Computerworld.* You can contact her at **maryfran_johnson@computerworld.com.**

Only a few weeks earlier, my priorities seemed perfectly aligned. When there's so much to do that it's simply too much to accomplish everything, most of us just do the next thing on the list. Whatever that is.

IT organizations are guilty of this behavior on a much grander scale, especially during this prolonged stretch of "doing more with less." This leads to impossibly long project lists and stretches resources wafer-thin in all directions. It also lengthens the eternal struggle to align technology spending appropriately with business needs.

And this means real trouble in 2004.

Why? Because the IT resources balancing act now includes perilous new elements that can't be ignored, as this week's Cover Story on prioritizing business projects, security and legislative mandates points out ["Too Much to Do!" QuickLink 43236]. The biggest challenges for IT organizations in the coming year won't involve debates over Web services or wireless rollouts. They won't revolve around internal business units or even external customers. They'll involve lawyers, auditors and worried boards of directors — a trio of external factors that will reshape the IT management landscape in unforeseen ways.

"It's frustrating. I have other aspirations, like growing the company, satisfying the customer, increasing operational efficiencies," says Marty Chuck, CIO at Agilent Technologies, one of the companies profiled in our story. "I don't want to be spending on [regulatory issues]. It's a necessary evil, chewing up resources we'd rather spend on something else."

Chuck makes the important point that IT alone can't be responsible for solving these problems. Senior business management needs to help set priorities about how regulatory and security issues should be handled. "You've got to get senior business leaders into the process, or it can eat up a lot of time and money," he warns, referring to that IT propensity to take on yet another problem and overengineer the solution.

Our story delves into the details of how several companies — Agilent, Harrah's Entertainment, CIT Group and Pacific Gas & Electric — are balancing their regulatory risks with their business priorities for the coming year. CIT Group, for example, brought in a consulting group to help create a mapping process that ranks the security risks of different applications. The CIO also pulled the CFO and various business units into the act of determining expense levels and project pacing.

I heard that same desire for deeper IT/business collaboration in setting priorities echoed recently at UCLA, during an IT executive education program at the Anderson School of Business. Two dozen senior IT managers were debating how to best show leadership on the business side, given the way so many companies still view IT as a service organization rather than a strategic player. "We're here to learn the business models, to get beyond just great competence in IT," said one executive.

Getting beyond technology competence and connecting with business priorities is the single most important task facing IT leaders in the coming year. And the best IT organizations will use this looming crisis of regulatory compliance and security threats to make that connection and, more importantly, to help unscramble those priorities. **43649**

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PIMM FOX

IT Over There, If You Dare

LONDON

EUROPE'S IT HIRING is rebounding, albeit slowly, primarily because of developments in the areas of outsourcing and corporate governance. U.S. IT pros interested in international careers could have a leg up, since they're very familiar with the first and gaining experience with the second.

Helena zu Hohenlohe, an IT specialist at London-based headhunting firm Christopher Beale Associates Ltd., says companies, particularly in financial services, define *corporate governance* in terms of operational transparency. European executives see IT as the tool to monitor day-to-day operations — guarding against the sorts of financial and legal snafus that U.S. firms are still reeling from. Senior-level IT managers who can combine tactical technology knowledge with a firm grounding in financial controls, security and disaster recovery are highly prized.

PIMM FOX [illegible] Calif. [illegible]

Basel II and Sarbanes-Oxley have created a double-barrel headache for many European companies. Basel II is an international bank accord scheduled for approval in 2004 that governs accounting procedures at global banks and financial services companies. Sarbanes-Oxley created a new set of U.S. regulations pertaining to public companies, financial reporting, auditors and corporate executives.

The complexities of these directives put pressure on IT departments to build new risk management models, elaborate accounting controls and snappier ways to price loans, assets and liabilities.

And companies need to get the work done quickly, so the jobs are there. After all, everyone wants to keep the regulators happy.

Companies also want to keep the stockholders happy, so managers are expanding outsourcing to reduce costs.

IT specialists experienced in wrestling with shared responsibilities while steering a path for development and cost-cutting are in demand. To be a CTO or CIO in Europe, you've got to show how you're going to manage IT operations when half the IT staff is in India or really works for IBM or EDS.

"Because companies are outsourcing great chunks of IT," says Hohenlohe, "you can't think in terms of 'my people' or 'your people' anymore. You have to think of ways to link IT resources and responsibilities."

An accompanying trend is the development of specialist centers within IT. That has arisen because it has become difficult to manage technology and vendor relationships without centralizing responsibility. For example, setting up an ERP specialty devoted to an SAP implementation is common.

"Companies have rationalized systems," said Hohenlohe. "Now they need people to manage the infrastructure, and that can include an outsourcer, a custom application and links to outside services."

If this all sounds daunting, it is. But don't be dissuaded — many positions still come with four weeks' vacation.
43518

MICHAEL GARTENBERG

'Tis the Season to Predict

THIS IS MY favorite time of year. I'm not talking about the holidays, the good cheer and season's greetings. I mean Prediction Season, when everyone with an opinion publishes a list of what he thinks lies ahead. In the spirit of that season, here's my 2004 Top 10 forecast.

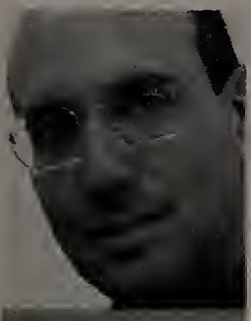
1. Converged devices will remain a niche. Despite all the hype, converged mobile devices still won't have strong appeal in the market, and no device that attempts to integrate three or more primary functions will win over the marketplace. Users are willing to carry up to three devices. Handheld adoption will be driven by primary intended use, with secondary functions only contributing value to the product, not serving as the reason for buying it.

2. Wi-Fi will overtake wired. Security is good enough, and IT shops are looking for new ways to increase productivity. Secondary benefits are important as well, and corporate Wi-Fi will become the norm and not the exception.

3. Security will still be a hot issue for Microsoft. This one is easy. As long as Microsoft relies upon a core operating system that was architected when the Internet was a tool for scientific research, security issues will abound as cybercriminals play cat and mouse with Redmond. Longhorn can't ship any too soon. Speaking of which . . .

4. Longhorn will become the answer. If you ask any question about Windows deficiencies, be prepared to hear "It will be fixed/added in Longhorn" from Microsoft.

5. Apple will return to the IT market. The time is right. While Microsoft remains in a Longhorn holding pattern, Apple Computer will seize the opportunity to gain some modest ground with IT departments that are looking for valid Microsoft alternatives.



MICHAEL GARTENBERG is research director for the Client Access and Technologies group at Jupiter Research in New York. Contact him at **michael.gartenberg@mindspring.com.**

6. Tablet PCs will go mainstream. The new hardware is great, and the new operating system makes the experience better. With lower price differentials and new form factors, tablet computers will go from the 20% of IT departments piloting them this year to full-scale deployments at many more companies.

7. Instant messaging scandals will replace e-mail ones. IT shops that aren't using secure IM will likely face some public embarrassment over information discussed in a chat that someone thought was private and later was publicly disclosed.

8. Corporate weblogs will catch on. Businesses will begin to see the weblog light. For internal communication, blogs are ideal, and they also work well for marketing communications. Subprediction: More employees will be fired for comments made on their personal weblogs.

9. IT will manage commingled information spaces. IT should begin to deploy effective synchronization tools that will easily let users commingle business and personal data. IT should also be prepared to support the synchronization of information on two or more computers. It's not ideal, but users no longer nicely segment themselves for IT.

10. Moore's Law will continue to be irrelevant for most users. While speed increases are nice, they remain unjustified for most users, for whom "fast" was fast enough around 1999. The focus will be on vendors providing more customer-based software that increases productivity rather than on feeds and speeds.

Most important, we will hopefully reap the benefits of technology in a new year filled with peace, prosperity and positive growth. Best wishes for the holidays, and see you in 2004.
43516

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READERS' LETTERS

Laughter Reloaded

NICHOLAS PETRELEY'S spoof of *The Matrix Reloaded* ["NetWare Reloaded," QuickLink 42908] was incredible. I almost busted my gut laughing. I have read *Computerworld* for years and applaud the way in which you still manage to keep a sense of humor while doing a great job of reporting IT news. Keep up the great work!

Damon Runion
Reston, Va.

Think Thin

SINCE I STARTED learning how to develop computer software from IBM 37 years ago, I have seen many changes. Now I work in state government with core business systems where we have large databases, complicated business logic and severe budget constraints. It is encouraging to read about people realizing that thick clients require more support staff and cause higher costs ["IBM's Mills Sets Software Sights on Middleware, Linux," QuickLink 42279]. We have had very good success the past two years with a Web server that executes on the mainframe under the z/OS operating system (Shadow Web Server from Neon Systems). We can give the end user all the graphical functions he likes without giving up the traditional security, reliability and scalability. I hope more people realize that there are good, economical alternatives to Microsoft and client/server systems for large applications. What is wrong with Cobol?

Agness Gunter
Budget systems development specialist, Office of State Budget and Management, Raleigh, N.C.

No Help Needed

I ALWAYS LOOK FORWARD to reading Frank Hayes in his column Frankly Speaking. However, in his Dec. 8 article titled "Talk Is Cheap" [QuickLink 43293], he isn't the astute observer he usually is. Decrying the lack of government meddling in IT security, he says that "we are truly on our own." I can't imagine not wanting to be on my own. I don't want the "full, active support of the U.S. government . . . in securing cyberspace." That can only lead to increased costs and further government encroachment where it doesn't belong, not to mention yet another taxpayer-funded boondoggle as the federal government tries to establish one-size-fits-all security standards. Thanks, but they've been enough help already.

Cathy Taddei
Portland, Ore.,
Cathy.Taddei@comcast.net

A Call to India

OUR EXPERIENCE with Microsoft support has always been excellent, but this past month, when we had an Exchange problem, our call got routed to a support center in India ["Offshore Support Questioned," QuickLink 43340].

The technician made little attempt to understand our problem, merely consulted the Microsoft knowledge base articles (something we could just as easily do), and suggested we rebuild the whole machine and reinstall Exchange, which would have involved a huge investment in time, the loss of significant data and e-mail being down for an extended period of time. We asked to be placed back in the call queue (to get a new technician) and got routed back to the same support center in India – with the same result – four more times. Finally, we escalated to Microsoft support managers, and a technician from Dallas called. He solved the problem within 15 minutes – all we had to do was log in from an NT machine to update permissions (our 2000 machines weren't working). Dramatically less involved (and less costly) than reinstalling Exchange. Microsoft may say they open new support centers thoughtfully, but our experience suggests otherwise.

Jim Miller
Chief technology officer, Creditex Inc., New York,
jim@creditex.com

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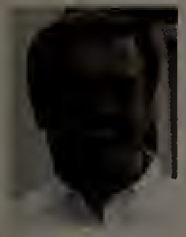


Q&A

Digging Into Documents

Ronen Feldman, president of text mining software company ClearForest Corp., tells *Computerworld* how he thinks the technology can transform business. **Page 28**

HANDS ON REVIEWS

Taming the Rattle and Hum

Here's advice for the home worker trying to muffle the roar of the fans and other components of noisy PCs. **Page 30**

FUTURE WATCH

Digital Defense

As network intrusions grow in number and sophistication, researchers are finding ways to make systems more like the human body — adaptive and resilient, even against unknown attacks. **Page 32**

OVERCOMING WEB SERVICES INSECURITIES

OUTLOOK: Web services security standards still aren't complete, but putting an application tied to sensitive data on the Web needn't be a recipe for disaster, if you follow the current Web services security model, users say. **BY MARK HALL**

BRITISH COLUMBIA'S Ministry of Attorney General has a database with secret witness information. DaimlerChrysler Services North America LLC runs business applications with sensitive dealer and partner data in them. Lydian Trust Co. holds private financial information about its wealthy clients in its data files.

All these organizations have something in common: They expose those systems to the wild and often dangerously insecure World Wide Web. And they confidently secure any access to or transactions on those systems through Web services.

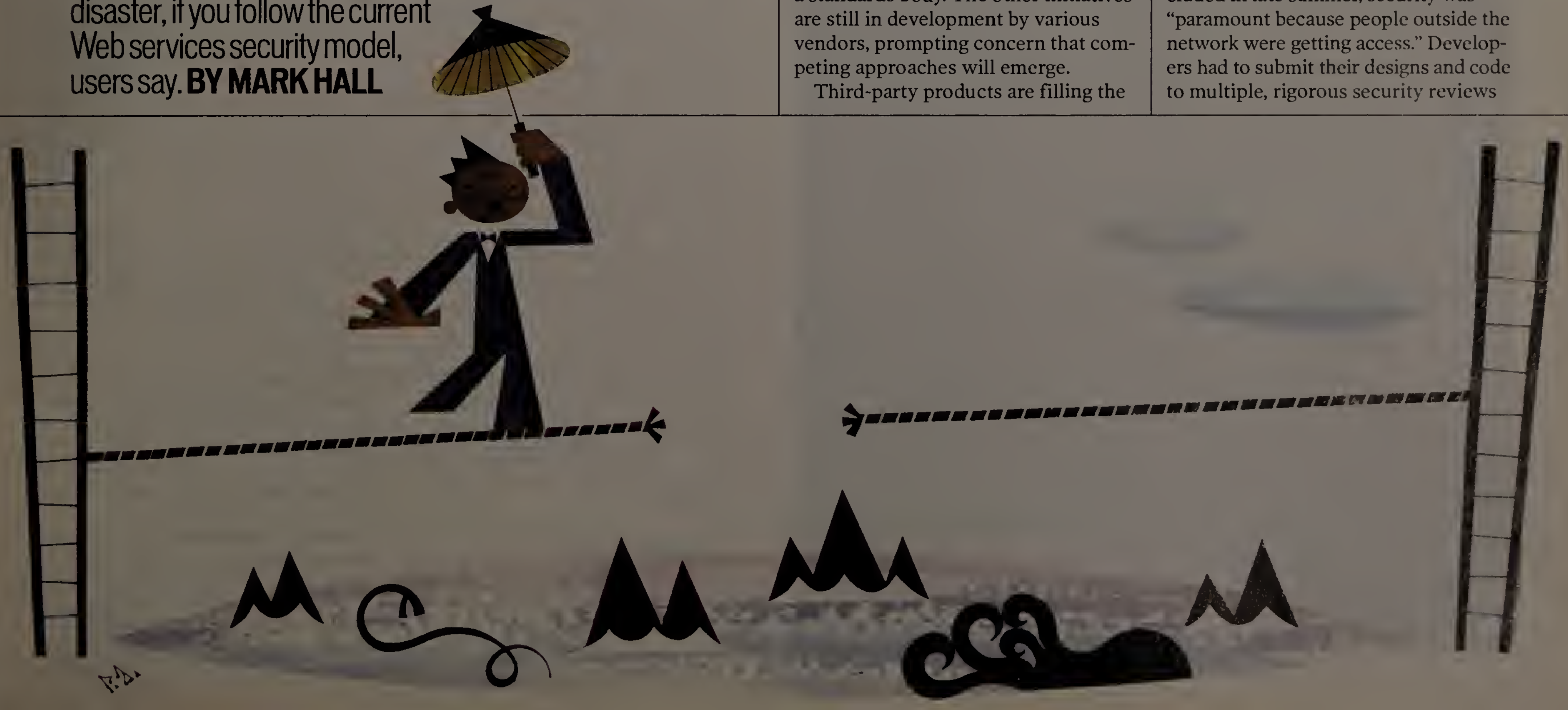
But none of them stepped blithely into Web services development. That's because the state of Web services security standards remains in flux. Only one of the proposed standards, Web Services Security, has been completed, and it hasn't been officially adopted by a standards body. The other initiatives are still in development by various vendors, prompting concern that competing approaches will emerge.

Third-party products are filling the standards gap for now. Most suppliers claim that they will adopt the standards that do emerge. But any IT shop that's attracted to the power and flexibility of Web services must do its homework.

No Room for Compromise

"We spent several months trying to solve the problem of giving real-time access to our database without compromising the security of the information," says Robert McDonald, director of application management services at the Victoria-based Ministry of Attorney General.

Tony Lyons, a senior IT manager at DaimlerChrysler in Farmington Hills, Mich., echoes the concern for caution, saying he was "absolutely" nervous about Web services security at first. Lyons recalls that throughout his company's 10-month project, which concluded in late summer, security was "paramount because people outside the network were getting access." Developers had to submit their designs and code to multiple, rigorous security reviews



by corporate standards committees.

These weren't rubber-stamp exercises. His team was more comfortable building security into client/server software, where they had loads of experience with middleware tools that used Common Object Request Broker Architecture, Component Object Model (COM) and other methods. Now they had to defend their use of XML, SOAP and other Web services standards. It was "a challenge," Lyons acknowledges.

John Studdard, chief technology officer at VirtualBank, a division of Lydian Trust in Palm Beach Gardens, Fla., also dismisses using technology "from the old days," despite the comfort level developers have with it. "DCOM, COM and such are complex to maintain and complex to secure," he says.

Luckily, the multitier model of Web services has matured fast enough to make it possible to implement secure software for a broad base of online users. "Web services works well, especially when we work with our outside constituents," says McDonald.

The ministry assigned him the task of building an application that gave online access to court proceedings in the province. Until the application rollout, if anyone wanted to find out, say, a given trial date or the judge assigned to a particular case, they had to visit a courthouse. The access problem was compounded by the fact that all information related to provincial cases resided in a centralized Oracle database that included information about witnesses and other restricted data. And the data changed often, adding to the difficulty of the project.

"The information was sensitive and dynamic, with lots of last-minute changes," McDonald says. That meant he couldn't simply create a subset of the database and expose it to the Web.

Security Through Separation

McDonald hails the architecture of Web services as secure because he can "separate the client from the database and both from the security model."

In the ministry's Justice Information Systems project, called JUSTIN Public Inquiry, users sign on via a browser, and a Java-based Web services program sends the log-in information in XML-encrypted format to a gateway from Layer 7 Technologies Ltd. in Vancouver, British Columbia. The SecureSpan gateway authenticates the user and reveals only authorized services to whoever logs on. For example, a lawyer in a financial corruption trial might have access to different services than a citizen checking on traffic-court dates would.

The system encrypts each message sent using 128-bit algorithms and can authenticate it to ensure that no one has hijacked a session. And the services that are exposed to users are written as Java stored procedures, so no other action can be taken except for the function of the procedures.

McDonald praises the tools Oracle Corp. has put into its Oracle9i database. He says the Web services tools greatly eased the creation of Java stored procedures, which enhance the application's security.

At VirtualBank, where Studdard oversees Web services development for all the divisions of Lydian Trust, credit and fraud checking is done using external credit bureaus, such as LendingTree Inc., over the Web. Because the data transferred between services is sensitive, such as Social Security numbers and account information, the messages follow the Web services security model for encrypting messages between sites.

Studdard also uses Directory Smart from OpenNetwork Technologies Inc. in Clearwater, Fla., which works with his Windows 2000 Active Directory Service to authenticate external users to access internal Web services and authorize their levels of access.

Two key benefits of the security model in Web services are that it can scale and that, because the security process exists outside the applications that use it, the technology supporting the process can change as needed without affecting the application, Studdard argues. Likewise, while OpenNetwork strives to work within the working specification being developed by Microsoft Corp., IBM and other vendors for the Web Services Policy Framework, Web Services Trust Language and other emerging standards, Studdard says he's confident that if his vendors fall out of compliance, he can simply swap out the security services.

"We have a layer written to change out our security depending on where the standards evolve," he says.

Getting up to speed on the architecture, methodology and tools for writing Web services applications and then securing them remains the most common problem today, users say. Success, however, has spurred wider adoption, putting a greater emphasis on security.

Of the 26 projects on McDonald's to-do list for the next 12 months, "six or seven have an e-service component to them," he says. "And all here agree that Web services will be the architecture." 42781

THE STATE OF THE STANDARDS

Web Services Security

WSS defines how to encrypt a session and add security features such as digital signatures to a message. It also attaches an encrypted credential in a SOAP message that reveals the identity of the sender or the sender type, such as bank teller or customer. The draft specifications are approaching the end of public review and should be ready to be finalized by the Organization for the Advancement of Structured Information Standards this month.

Web Services Policy Framework

This draft specification, created by BEA Systems Inc., IBM, Microsoft and SAP AG, is now in an evaluation process. WS-Policy lets a service "advertise" what kinds of policies are required to use it. For example, a service may accept only Kerberos for the authentication of users.

Web Services Trust Language

Created by IBM, Microsoft, RSA Security Inc. and VeriSign Inc. and now in the evaluation process, the WS-Trust draft specification defines how a requesting service can get a token, such as one that authenticates a user. It also establishes the types of tokens accepted by the service and distributes tokens.

Web Services Federation Language

Before federated security services can be conducted, trust relationships must be established among the organizations sharing the service.

The WS-Federation draft specification, developed by BEA, IBM, Microsoft, RSA and VeriSign and now in the industry evaluation process, provides mechanisms that allow access to distributed-account, attribute, authentication and authorization data from many trusted organizations.

A MATTER OF TRUST

Distrust among vendors has held back development of Web services security standards:

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WEB SERVICES SECURITY TOOLS

ACTIONAL CORP.
Mountain View, Calif.
www.actional.com

- **SOAPstation** is a Web services broker that acts as a proxy, brokering the interactions among Web services.
- **SOAPstation Edge** is an XML firewall for incoming service requests that cross multiple security domains.

DATAPOWER TECHNOLOGY INC.
Cambridge, Mass.
www.datapower.com

- **XS40 XML Security Gateway** is an intelligent XML/SOAP firewall.

OPENNETWORK TECHNOLOGIES INC.
Clearwater, Fla.
www.opennetwork.com

- **Universal IdP** is an identity management product with centralized policy enforcement for either .Net or Java Web services.

NETEGRITY INC.
Waltham, Mass.
www.netegrity.com

- **TransactionMinder** secures access to Web services by inspecting the security information contained in the XML documents submitted by Web service consumers. The TransactionMinder XML agent communicates with the Netegrity Policy Server and processes the authentication and authorization steps.

PHAOS TECHNOLOGY CORP.
New York
www.phaos.com

- **Phaos XML** includes tools for encryption and signing. It complies with the W3C XML Signature and XML Encryption specifications.
- **Phaos XKMS** provides support for registration, location and validation of keys and certificates using a trusted Web service.
- **Phaos SAML** is complementary to Phaos XML for XML-based security assertions for entity attributes, authentication and authorization.
- **Phaos Liberty** works with Phaos XML and provides secure federated network identity for single sign-on.

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Digging Into Documents

As the need to exploit unstructured data grows, text mining technology is evolving to meet it, says ClearForest's **Ronen Feldman.**

Q&A

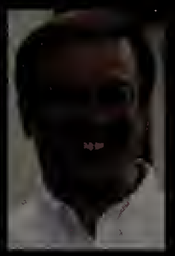
Formerly used primarily by the intelligence community and businesses that are strongly dependent upon research, text mining technologies are now beginning to find more general acceptance. The mounds of unstructured data that have been piling up in companies for decades are growing larger as a result of new regulatory requirements that are forcing companies to retain e-mail and other documents — and to be able to find specific information in them. The key to making text mining work for business — not to mention the intelligence community — is striking a balance between accuracy and speed, says **Ronen Feldman,** *chief scientist at text mining software company ClearForest Corp. in New York. In a recent interview with* Computerworld*'s Tommy Peterson, Feldman discussed how text mining technologies work and what promise they hold for business.*

What is text mining? How do you squeeze information out of unstructured data? Basically, text mining is the same thing as data mining for structured data, but for documents. So the first thing that you have to do is create some structure. In order to create structure, you actually have several possibilities. The easiest way is to work with the bag-of-words model. Basically, each document is just a collection of words. That is purely statistical — you're doing no semantic analysis. There are still some companies who are doing this. They basically use the simplest possible approach.

The next level is categorization. You basically provide tags for the whole document. The last way to structure the documents, which is the most sophisticated, is to do information extraction. There you don't provide tags for entire documents, but you actually extract entities and relationships from the document. But that means that the processing is much more sophisticated and obviously takes more time.

Do companies have to choose speed vs. sophistication? This is the spectrum — [bag-of-words] is the easiest and of course the fastest, but it doesn't buy you a lot of mileage, because there is no semantic analysis. With [categorization], you have a little more, but still it's still not a good enough infrastructure, because you won't have enough tags per document — usually two or three tags per document.

RONEN FELDMAN



Age: 41

Company: ClearForest Corp.

Titles: President and chief scientist

Background: Ph.D. in computer science from Cornell University; served as a captain in the information and intelligence services of the Israeli army; helped found ClearForest, which was originally Instinct Technology, in 1993; serves as a consultant to IBM, El-Al Israel Airlines, Telrad Networks, Bezeq, Israel Electric Co. and the Israel National Coal Co.

Let's take a document of two pages. If you do information extraction, you can expect 50 to 100 tags, a completely different order of magnitude. Clearly, you get a much better foundation for text mining. Information extraction is the key challenge, and it's what really lies at the heart of our ClearText product.

Tell me more about information extraction. There are two main camps in how to do information extraction. The first camp is the knowledge engineering camp, where structurally derived patterns help you to identify that specific noun phrases should belong to a certain class. The classes would depend on the domain in which that document is living. If we're talking about the intelligence domain, then the classes of entities you'd be interested in would be people, organizations, weapons, things like this. Relationships would be . . . family relationships, people who served together in the army, two people who talked on the phone. In order to develop those entities and relationships in the knowledge engineering approach, you have to define patterns for each entity and for each relationship. You do it usually if you have a very good development environment, and [ClearForest] has had such an environment for six years, which we continue to enhance and add more features to all the time.

The second camp is based on machine-learning algorithms. In machine learning, you basically learn by example. There are rules, but the rules are written automatically, so it's mainly statistical. The problem is that you need to provide thousands of examples sometimes, meaning thousands of documents. Thousands of documents can take you several months. We saw in a practical project [that] customers are just not willing to do it and in many cases just killed this approach completely. They prefer to use our approach because then they can rely on generic concepts that we have developed already. It's not as though we start from scratch — we have already developed most of the domain-specific entities.

MORE ON TEXT MINING

For more of the Ronen Feldman interview, visit our Web site:

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Does this end up being knowledge management? *Knowledge management* is a very broad term; people have used so many different tools to do knowledge management. We are at the infrastructure level, so most of the knowledge management tools should use our software.

Do you worry about legal issues? When corporate e-mails are mined, will employees feel that their privacy is being invaded? We provide the tools; the usage is up to the customer. They need to worry if they are doing something which is illegal. We create generic technology and sell it to customers. They have to live up to traditional promises not to snoop around their employees too much. The only area I can see it used is in compliance, and that should be legal for companies to check that their employees are not doing anything they shouldn't.

Can you give me a good idea of what this technology is going to bring to a specific business? Let's take a pharmaceutical company. The researchers need to read a lot of papers in order to make inferences and get more acquainted with the subject. And usually they spend a lot of time with [the] Medline [Web site] and [scientific] journals like that. And they spend a lot of time just searching. With an application like ours, they can can take entities they are familiar with — genes, etc. — and specify the queries in a much more focused way. And that means that they focus a lot more on the real development. The hard labor of searching for the information will be saved, which will shorten the time that they take to find new drugs.

How will this technology change the way companies do research? I think that most of the hard labor will be saved, and you will be able to focus on thinking and making inferences and conclusions — things machines are actually not so good at. **43575**

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Taming the Rattle and Hum

Noisy equipment can drive the telecommuter to distraction. Here are some tips on reducing decibel levels in your home office. By Todd R. Weiss

IT WAS LIKE WORKING next to a jackhammer. Every time the home-built PC in my three-computer home office was turned on, it shattered the relative quiet with roaring cooling-fan noise.

I had to shut the PC down when I was talking on the telephone in order to hear the person on the other end of the line. The screaming fans could even be heard in the living room, one floor below. Something had to be done.

An online search uncovered a multitude of sound-reducing replacement components, from case fans to power supplies to insulating kits. By swapping out parts, I was eventually able to reduce the roaring sound of the PC by more than half, restoring my sanity.

HANDS ON REVIEWS

By the Numbers

Sound is measured in decibels (db). A 10db reduction cuts the loudness of a sound by more than half, according to acoustics computation.

To measure the noise in my home office, I used a Bruel & Kjaer North America Inc. Precision Sound Level Meter Type 2203, equipped with an octave filter to take sound readings from 21 inches away. The meter was set to use an A-contour sound filter, which eliminates inaudible low frequencies and provides readings more closely aligned to those experienced by the human ear.

The sound level in my office with all the PCs off is 23db — about the same as the noise level of a quiet living room. But when the home-built PC was turned on, it pumped up the volume to 45.5db, roughly comparable to the constant hum of a refrigerator. And it was even louder when the hard drive was spinning during searches for data.

That was where I started. After I installed quiet parts, the sound level with the once-noisy PC idling came down to 31db, which is about the same as a soft human whisper. The change was dramatic — now you can barely hear the PC, even if you put your ear right next to it.

The Quiet Begins

To get the drastic sound reduction, I installed major parts and made minor modifications, such as adding rubber vibration-insulating feet for the mid-tower case.

Other things had to be uninstalled. First to go was the stock Antec Inc. 300-watt power supply. In its place, I tried out two different units — a 350-watt model from StarTech.com USA LLP and a 300-watt power supply from Nexus Technology BV. But neither replacement unit had much of an effect on the sound of the PC; it turned out that they were overwhelmed by noisier parts.

Next, I swapped out the stock cooling fan for the Athlon XP 1700 processor from Advanced Micro Devices Inc. In its place, I installed an 80mm Panaflo fan with a copper ThermalRight SLK800A heat sink. The Panaflo fan did cut the sound, but only by an imperceptible 1.5db.

Then came the biggest surprise: The worst offenders turned out to be the two simple and cheap 80mm case fans. I got a dramatic 8.5db decrease in noise when I replaced them with Panaflo fans. The total sound drop, now 10db, literally halved the noise from the PC — and there were more reductions to come.

I was able to reduce the fan noise further by installing Zalman Tech Co. Fan Mate 1 rheostat controllers, which you can use to manually reduce fan speeds so they make less noise but still provide adequate cooling. Slowing the fans by adjusting the Zalman controllers brought the sound down another 1.5db to 34db.

Next to go was the Accelerated Graphics Port video card, which had a built-in cooling fan. I replaced it with a fanless AGP card, knocking another 2db off the total. At 32db when it was idling, the machine was like a faint echo of its former self.

Now it was time to quiet the Western Digital Corp. 80GB 7,200-rpm Caviar hard drive. I removed the drive from its rigid mount in the PC's buzzy metal case and inserted it into a No Vibes III rubber-mounted isolator, which suspends the drive in thick rubber bands to cushion and quiet it. Although the No Vibes device didn't lower the sound level at idle to less than 32db, it did reduce the noise the hard drive made when it was spinning during data searches by 4.5db, bringing the overall level to 37.5db.

The final step was installing sound-deadening AcoustiPack foam padding inside the PC's case. The self-stick foam pads helped absorb any noises remaining after parts were replaced. They brought the final reading down to a calm 31db, for a total 14.5db drop in sound.

Benchmark Comparison

Inspired by the success I had reducing the noise level of my home-built PC, I decided to build a test rig entirely from quiet parts. From the start, the test rig set a baseline score of 33.5db. The results showed that by using quiet parts, it's easy to build a low-noise PC — and avoid the anguish of loud equipment on the psyches of office workers.

The second machine features Antec's Sonata quiet case, which includes a rubber-mounted low-noise rear fan, rubber hard-drive mounts and a noiseless power supply. Inside is a fanless MSI K7N2-L motherboard fitted with an AMD Athlon XP 2200 processor, along with a quiet Panaflo 80mm cooling fan and a Zalman CNPS6000 copper heat sink.

I also installed a Seagate Technology LLC Barracuda V 120GB hard drive, which is barely audible when it's running. Searches on the Seagate drive are so quiet that they don't affect the 33.5db sound level even when the disk is thrashing for data.

The outcome of the experiment was clear — I fought the noise, and the noise lost. With a little part-swapping, it's possible to keep disruptively loud PCs out of the workplace. None of the replacement parts are difficult to obtain or install, and the gains in workplace morale and productivity can be dramatic.

A few new components are certainly cheaper than ongoing therapy for a home worker driven to distraction by the rattle and hum of his equipment.

43367

FIND THE VENDORS

To learn how to contact the vendors of the quiet equipment mentioned in this article, visit our Web site:

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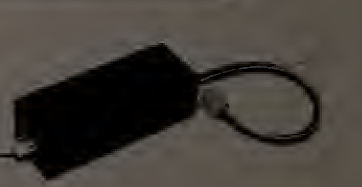
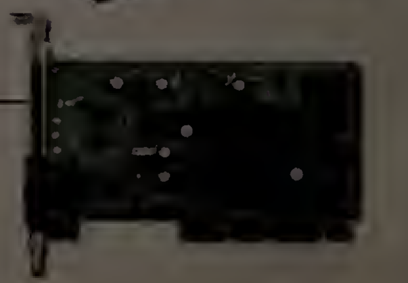
QUIET TIME

With his home office noise readings drifting toward construction-site levels, Todd R. Weiss took steps to bring the chaos under control. Here's how he reduced the sound in his work environment.

Replace stock cooling fan on Athlon processor with Panaflo fan	-1.5db
Replace 80mm case fans with Panaflo fan	-8.5db
Adjust Panaflo fan speeds using Zalman controllers	-1.5db
Replace video card with fanless AGP card	-2db
Add foam	-1db





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Digital Defense

Coming for information security: tools for adaptive and resilient computing. **By Gary Anthes**

THE BATTLE AGAINST computer viruses and system intruders is often described as an arms race, in which increasingly powerful weapons are countered by ever stronger defenses. But this particular arms race isn't in a dead heat; the mavens of malware are winning it.

There are several reasons: Computers are increasingly connected by high-speed links, facilitating the spread of malware; software is growing in complexity, and with complexity comes vulnerability; and attack weapons are increasing in sophistication and ease of use [see diagram].

But there is hope, say a new breed of computer security researchers. A number of them met recently at a workshop called Adaptive and Resilient Computing Security at the Santa Fe Institute in New Mexico and unveiled ideas for an arsenal of new defenses. The measures are based on widely varying concepts, and they range from ideas to working prototypes to nascent commercial products. But they share these characteristics:

- They don't rely on predetermined definitions such as virus signatures, attack scenarios and vulnerability exploits. Thus, they're able to recognize attacks that haven't occurred before.
- They're intended to allow a system to keep running in the face of an attack, albeit often at a reduced level of effectiveness.
- They learn and adapt to changing attack scenarios.
- They limit false alerts, which can render defense systems unusable.

FUTURE WATCH

Some researchers are drawing inspiration from biology. "The biological immune system is an elaborate defense system which has evolved over millions of years, probably through extensive redesigning, testing, tuning and optimization," says Dipankar Dasgupta, director of the Intelligent Security Systems Research Lab at The University of Memphis. Dasgupta points out that the human body protects itself in multiple ways. The skin and mucous membranes act to prevent the entry of pathogens into the body. But if pathogens do succeed in entering the body, innate immune reactions come into play, as do acquired or "adaptive" immunities that learn from past infections. In addition, the body employs defense mechanisms at various levels — cellular, molecular, peptide/protein and DNA.

Just as no one biological protection suffices to keep us healthy, no single computer defense is adequate for all attacks, Dasgupta says. "Today, these things operate independently. They are by different vendors; they don't talk to each other very well."

But Dasgupta's lab has built software prototypes that address that weakness. His Security Agents for Network Traffic Analysis uses mobile software agents for intrusion detection in a network of computers. Agents monitor at multiple levels — packet, process, system and user — using neural networks to spot anomalous behavior and "fuzzy rules" to decide what action the agents should take in the face of an attack.

We can learn from biology, says information security researcher **Dipankar Dasgupta.**

Variation Helps

Stephanie Forrest, a computer science professor at The University of New Mexico, points out that diversity in biological and ecological systems leads to robustness and resilience. "But our software is almost a monoculture," she says. She's working on "automated diversity for security," in which each system is made unique by arbitrary random changes. "That increases the cost of attack, because the attack has to be adapted for each computer," she says.

Diversity can be created in a number of ways, such as by adding nonfunctional code, reordering code or randomizing memory locations, file names or system calls.

Other researchers are experimenting with a measure called Kolmogorov Complexity, the minimum number of bits a character string can be compressed into without losing information. Scott Evans, a researcher at GE Global Research, has used it to study attack scenarios.

Evans analyzed file transfer protocol logs and found that attacks, such as a stealth port scan, tend to be more or less complex than normal behavior by predictable amounts, allowing a defense tool to identify and block the attacks. The technique is attractive because it is adaptive and requires no attack signature database, Evans says.

Real-world application of some of these ideas lies years in the future, but Steven Hofmeyr, a former graduate student under Forrest, has already commercialized some of them. He's developed Primary Response, which monitors and protects applications at the operating system kernel level. It uses agents to build a profile of an application's normal behavior based on the code paths of a running program, then continually monitors those code paths for deviations from the norm.

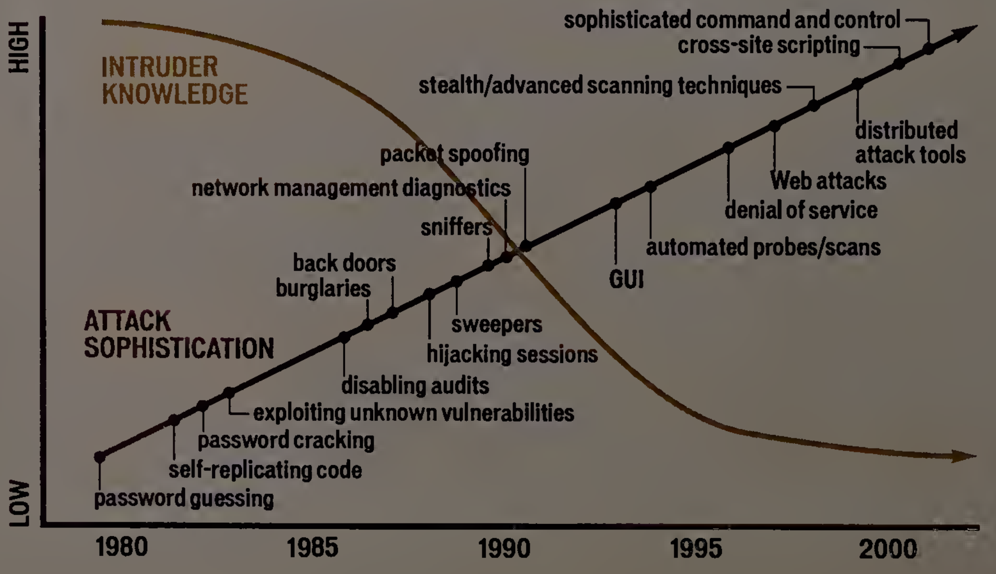
Primary Response works at the application level, where 75% of attacks occur, says Hofmeyr, chief scientist and a founder of Sana Security Inc. in San Mateo, Calif. Protection at the application level will become more vital as it becomes more difficult to define the network perimeter, where firewalls work, Hofmeyr says. "When something like Web services really takes off, it will really deal a death blow to perimeter [security], because it's very difficult to determine what's inside the network and what's outside."

When a Primary Response agent spots abnormal behavior, it sends an alert to a central server where it may be directed to block that behavior while letting other activities continue, Hofmeyr says.

Hofmeyr says he'd like to extend Primary Response to tuning and debugging. "A lot of what we see in production environments won't be malicious, but it will be indicators that something is wrong, such as configuration problems or hardware problems," he says. "When I look at the bigger picture, I see this sort of tool as something for system health in general." 43308

Attacks Get Easier, More Powerful

As the sophistication of Internet attacks increases, the technical knowledge of attackers on average is declining. Sophisticated attackers are building tools that novices can invoke with the click of a mouse.



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DEFENSE SYSTEMS

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Snort Enhancements Suppress IDS Headaches

Two new capabilities in the freely available Snort intrusion-detection system software prove their mettle in the field by reducing false alarms. By Mathias Thurman

FALSE POSITIVES and data management are two of the most frustrating aspects of using an intrusion-detection system, but a new version of Snort, the freely available IDS that we use, has greatly improved the situation.

SECURITY MANAGER'S JOURNAL

We have more than 15 IDS sensors, and a full-time person is needed just to manage the IDS infrastructure, including the constant deluge of alert data that the sensors generate. Although we configured the sensors to send their alerts to our Security Information Management (SIM) software, a product from Edison, N.J.-based netForensics Inc. that does event correlation and analysis, the sensors are still the first line of defense.

Data management starts with the sensors. SIM applies additional correlation methodologies to the events to generate more precise reporting and additional alerting, but the individual network sensors generate the actual alerts. The sensors do this by analyzing the network traffic and matching the pattern of activity to the hundreds of rules we set up in our Snort rule base that trigger alerts on suspicious activity.

The problem is that we must continually tune the sensors to our constantly changing environment. And one of the most difficult aspects of managing the IDS infrastructure is tuning the alerts to reduce false positives. In our network, for example, we have a lot of Web-based activity. Even within normal network traffic flows, IDS sensors generate alerts on activity that looks suspicious but is actually benign. When presented with these false positives, we have a choice: either configure the sensors to stop sending alerts about the event, which means deleting or "commenting out" the underlying rule from the rules database; or take up disk space and bandwidth by storing every instance of the event.

The latest release of Snort includes thresholding and suppression features. I suspect that these improvements will spur new sensor deployments while making existing installations easier to manage.

Thresholding, a common feature in commercial IDS products, helps manage false positives. We forcibly prevent our IDS sensors from processing many types of events because of the abundance of false positives these rules produce.

For example, we see many alerts whenever a person or program attempts to access the robots.txt file on each of our Web servers. This file provides a way for our Web servers to tell search engines which areas of our Web sites shouldn't be accessed. Our Web servers contain confidential or sensitive information that we don't want indexed on Yahoo or Google. Many applications and Web browsers attempt to access robots.txt as part of normal operations. But many hackers also attempt to access this file prior to an attack as part of a strategy to gather as much information about a target Web site as they can.

> **"We must continually tune the IDS sensors to our constantly changing environment."**

On or Off?

So we're in a quandary. Turning off the rules that generate this alert cut down on false positives. But it also creates a blind spot because we can no longer detect any malicious activity that those rules were designed to catch. But leaving it on means accepting hundreds of false-positive alerts per hour, each of which must be stored and analyzed.

Thresholding lets the sensors keep track of the number of file access attempts and produces an alert only after a certain number of attempts have been made. The IDS administrator can still watch for this event but isn't inundated with all those false positives. We have dozens of similar alerts that fall into this category. Until now, we've had to disable these rules. Now we can re-enable them.

Event suppression is a bit different. It works by stopping suspicious activity from generating alerts, without removing the rule from the rule base. This is done by suppressing event alerts when a user or device within a specified block of network addresses triggers the event. For example, we are constantly barraged by SNMP events generated by users and applications residing within the network operations group. They use SNMP to troubleshoot and monitor network devices and servers, but hackers also use it to launch denial-of-service attacks or to conduct surveillance.

Fortunately, the network operations center is configured on a separate network. So instead of completely eliminating a specific SNMP trigger from the rule base or configuring a thresholding rule, we can create a rule to suppress these SNMP events from triggering if they are initiated by a machine with an IP address belonging to the operations group. If you use this feature, it's important to know that the suppression rules are performed prior to the thresholding tests. Knowing that, we may combine suppression tests with thresholding rules to more accurately manage false positives.

Having reduced the Snort alert output, we can now focus on dealing more efficiently with incident response. Today the IT security team responds to all events, but we'd like analysts in the network operations group to also be able to respond. Until now we've found it difficult to properly train them. But with a potential decrease in the amount of false positives and more precise event generation, perhaps we can make this approach work. This could cut down on late-night calls to my staffers, who will be able to sleep knowing that our infrastructure is in good hands. ▶

WHAT DO YOU THINK?

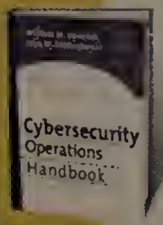
This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com, or join the discussion in our forum: **QuickLink a1590**

To find a complete archive of our Security Manager's Journals, go online to **computerworld.com/secjournal**

SECURITY LOG

Security Bookshelf

Cybersecurity Operations Handbook, by John W. Rittinghouse and William M. Hancock; Digital Press, 2003.



I was very much interested to see what this title had to offer in return for its $95 price tag. I wasn't overly impressed. Rittinghouse and Hancock cover a large range of topics but offer only the basic explanations of each without going into detail.

What readers will find within this tome's nearly 1,300 pages are some PowerPoint slides and policies from the SANS Institute Web site and the Department of Justice's search-and-seizure handbook. If you want to have a wide variety of information available in a single reference and don't mind looking elsewhere for details, then this might be a good book to consider. It also might work well as an introductory text for a college-level computer security class. But for most IT security professionals, other titles probably offer more bang for the buck.

– Mathias Thurman

XP SP2 Beta Ships

Microsoft Corp. will make the beta of Windows XP Service Pack 2 available to members of the Microsoft Developer Network by the end of the year. Due in mid-2004, SP2 will offer several security improvements, including an updated Internet Connection Firewall, renamed Windows Firewall, that's turned on by default, according to Microsoft. In addition, the remote procedure call service will run with reduced privileges, and the distributed component object model will have more access-control restrictions. SP2 also turns off the Windows Messenger Service, and Internet Explorer will offer explicit download links to protect users from accidentally downloading and installing potentially malicious programs.

TECHNOLOGY

BRIEFS

Actuate Delivers Easy Data Access

Last week, business intelligence software maker Actuate Corp. in South San Francisco announced a new product offering easy access to both reporting and analytic operations from a single server. Called Actuate Analytics, it will ship generally in January and starts at $15,000 per CPU.

FileNet Expands Portlet Support

Enterprise content management vendor FileNet Corp. in Costa Mesa, Calif., is adding support for several new Java portlets to its applications to allow easier integration with Web portals. The company said it will expand its suite of portlets and offer a development framework to support new portal computing standards, known as Java Specification Request 168 and Web Services for Remote Portlets. The company also plans to support the forthcoming JSR 170 standard.

Norfolk Southern Tracks Via Web

Modalgistics and TransWorks, technology development units of Norfolk Southern Corp. in Norfolk, Va., have created a Web-based application to help customer companies track shipments across all modes of transportation. The application includes carrier tendering and selection, pickup and delivery scheduling, and order tracking. Automated back-office processing is also included, the company said.

PeopleSoft Offers Free Training Tool

PeopleSoft Inc. last week shipped a free tool that enables companies to plan and track the payback on software training projects. PeopleSoft ROI for Training identifies relevant metrics and monitors them throughout a software implementation.

NICHOLAS PETRELEY

The Nightmare Before Christmas

I FOUND IT DIFFICULT to decide what to write for my Christmas column this year. My first plan was to provide a list of gift suggestions. For example, Sun could benefit from a subscription to *Self* magazine, since the company seems to be having a lot of trouble finding itself on its own. Instead, I decided it was impossible to turn to the festivities of the holidays without confronting some ghosts of the year past. So, with apologies to Clement Clarke Moore, I offer this interpretation of his famous poem:

……

'TWAS THE WEEK before Christmas, and at the workhouse
A few workers were griping an occasional grouse.
They'd been to a meeting of CEO pap,
Where they'd all settled down for a long winter's nap
And stolen a break from earning their bread,
While visions of bonuses danced in their heads.
Then out in the hallway there arose such a chatter,
I listened intently to see what was the matter.
"A present was placed in each cube with great care,
In hopes that we workers would notice them there."
So away to my cube I flew like a flash,
In search of an envelope filled with hard cash.

The fluorescent lights that were flickering low,
Gave a strobelike effect to the objects below.
Then, what to my wandering eyes should appear,
But a navy blue envelope with my name printed clear.
With a bit of a quiver, I almost felt sick;
I thought for a moment it might be a trick.
So rapid it beat as I stared at the name,
My heart at that moment was hopeless to tame.
My family and I were all fussin' and fixin',
For a merry vacation with a heapin' of glitzen!
Surely a check was what beckoned and called!
Now cash away! Cash away! Cash away all!

As after a meal one might savor a pie,
Before delighting the mouth — fill the nose and the eye
— For minutes I stared at that envelope blue,
While thinking of all of the things I could do.
And then, in a twinkling, I felt like an oaf,
It's for family, you see, that I labor, not loaf.

NICHOLAS PETRELEY is a consultant and author in Kansas City, Mo., and founding editor of VarLinux.org He can be reached at **nicholas@petreley.com.**

As I drew up my hand, and I turned it around,
The envelope glistened where glue had it bound.
It was dressed rather plain for a thing holding loot,
But tradition aside, decorations were moot.
If only it put a few toys in the sack,
That would surely make up for the frills that it lacked.
With IT positions so scarce it was scary
It took very little to make workers merry!

I thought as my grin was drawn up like a bow,
It was time to stop stalling and get on with the show.
Then I saw as I tore off the side with my teeth,
They had chosen the blue to hide pink underneath.
My countenance changed and I quivered like jelly,
When I found out my job was outsourced to Delhi.
I carefully placed the pink slip on the shelf,
As I desperately tried to get hold of myself.

I tried to recall with an ache in my head,
What during my nap the old CEO said.
I almost gave up and went straight back to work,
When I decided instead to go tell off the jerk.
And holding my finger right up to his nose,
I suggested self-love, though in words not quite those.
The company stock rose that month like a missile,
Then plunged as morale fell with each new dismissal.
By next Christmas I was working again, day and night,
As the new CEO charged with making things right.

……

I truly hope that this parody inspired a few laughs instead of tears, and wish all of you a most joyous holiday season and a new year filled with blessings beyond anything you can hope or imagine. 43600

MANAGEMENT

One Version of the Truth
For business intelligence systems, the Holy Grail is to produce "a single version of the truth." But getting there isn't cut and dried — it entails painstaking data modeling, plus political and turf battles. **Page 38**

OPINION
Grooming the CIO's Successor
Norbert J. Kubilus says IT organizations that fail at succession planning will falter when the CIO leaves. He lays out guidelines for developing the next CIO. **Page 42**

Q&A
BI: Last to Leave
Data management consultant William McKnight talks about the reasons why BI is a laggard when it comes to outsourcing IT projects overseas. **Page 40**

Too Much To Do!

Prioritizing business projects is hard enough. How do you integrate security and legislative mandates into the mix?

By Kathleen Melymuka

Regulatory requirements put an added burden on BOB PLANTE's IT staff at CIT Group.

GIORGIO PALMISANO

CIO BOB PLANTE was under the gun. A big security and controls audit of CIT Group Inc., completed in September, had left a trail of "red marks" — mostly related to legislation such as the USA Patriot Act and the Sarbanes-Oxley Act — that had to be addressed immediately. While Plante had recently reorganized his IT group to get a better handle on internal priorities for the Livingston, N.J.-based commercial and consumer finance company, these new legislative mandates were another story.

"He was getting battered by the auditors and the board," says Russ Ward, a senior account manager at Forsythe Solutions Group Inc. in Skokie, Ill., which helped Plante develop a framework to deal with the issues. "He tended to run from one hole in the dike to the next, responding to whoever was screaming loudest at the time. That's pretty common for most of the folks in his spot right now."

In the best of times, IT has too much to do, but over the past year or so, more and more priorities have been imposed from outside. Already overburdened IT groups must now respond to new legislative mandates, leaving even fewer resources to address pressing internal business needs. "There certainly are a lot of external factors causing more than the normal items on the IT agenda," says John Boushy, who, as CIO at Harrah's Entertainment Inc. in Las Vegas, knows something about regulatory requirements.

"Priority-juggling used to be internal, but now we're getting hit by external factors," says Jean Holley, former CIO at USG Corp. in Chicago. "Probably the biggest frustration is unfunded-but-mandatory things like Sarbanes-Oxley. These things are not optional, so how do you juggle those external components you've got to put in the mix?"

"It's frustrating," says Marty Chuck, CIO at Agilent Technologies Inc. in

Palo Alto, Calif. "I have other aspirations, like growing the company, satisfying the customer, increasing operational efficiencies. I don't want to be spending on this. It's a necessary evil, chewing up resources we'd rather spend on something else."

The challenge is twofold: How do you prioritize these external legislative requirements, and how do you then integrate those new priorities with must-do business projects?

At CIT, Plante and Ward needed to prioritize security and control requirements identified by the security audit. They looked at industry security and control standards such as Control Objectives for Information Technology (known as COBIT) and ISO-17799 as well as legislative mandates and identified the portions that were most critical to CIT, such as those involving change control and system security and recoverability. Then they developed a matrix to map those controls to their most critical systems. Finally, they overlayed the findings of the security and control audits, color-coding each area red, yellow or green, indicating greatest to least risk (see chart below). At that point, priorities became clear.

The next challenge is to complete the necessary compliance activity and still deliver what's in the regular IT project pipeline. Plante manages the competition for resources by detailing the cost of required improvements so that he, the CFO and business unit executives can decide on the proper pacing and level of expense for each.

Shrinking Demand

Detailing the true costs of proposed projects is a strategy CIO Roger Gray has elevated to an art form at Pacific Gas & Electric Co. in San Francisco, where the key to prioritization is to shrink demand. "What is unmetered is always overconsumed," he explains. "By metering things carefully, demand is self-correcting. I call it the 'Conservation of IT' principle."

IT usually does a good job of laying out one-time costs, he says, but it needs to do the same for ongoing costs, which are often hidden in infrastructure and maintenance budgets. "We don't hide those costs in a black box," Gray says. "If operations wants a system, they know what the bill will be as a project — as well as next year and the year after that."

When the real costs are revealed, demand curtails itself and prioritizing is much more manageable, he says, and budgeting and chargeback improve because there are no surprises.

Shrinking demand also means not going hog-wild over regulatory requirements. You have to meet the law, Gray says, but "the challenge is to be rational and not go around and do crazy things."

To shrink regulatory demands, he says, be sure to define requirements carefully and rationally, and use experts wisely. For example, Gray never uses auditors who also work as consultants to fix the problems they find.

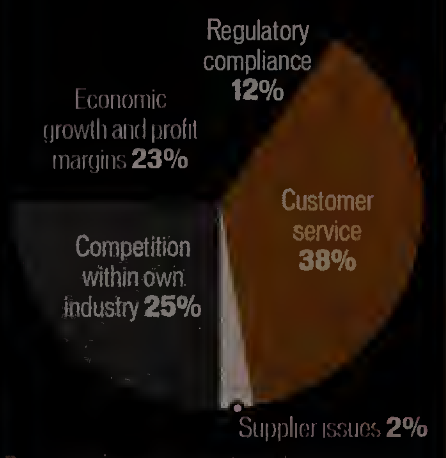
Your upper management should ride herd on regulatory issues and set priorities, Chuck adds. "If anything related to security, audit or Sarbanes-Oxley is left at too low a level, well-meaning people will overspend on it," he explains. Where they jump into the minutiae of compliance, a senior executive with a broader perspective might realize that there are whole areas that don't even need to be addressed. "You've got to get senior business leaders into the process or it can eat up a lot of time and money," he says.

While doing everything he can to shrink internal and external demand, Gray also focuses on productivity. "If we can become 1% to 2% more productive every year, in theory we can absorb 1% or 2% of things that come at us without sacrificing," he explains. "So we try to get better at what we do so we can absorb these new requirements. Every business has to do that."

Harrah's IT group is doing a variation on that theme. Boushy has invested for years in "strategic resource augmentation" — using contracted labor and outsourcing to provide additional skills as needed — to grow his IT capacity dramatically. "What helped us get past the paradigm of how to allocate a fixed set of resources was turning the problem sideways," he says. "If I can get more resources, I don't have a number-of-projects problem."

Pressure Cooker

The issues most likely to influence IT investments in the next 12 months:



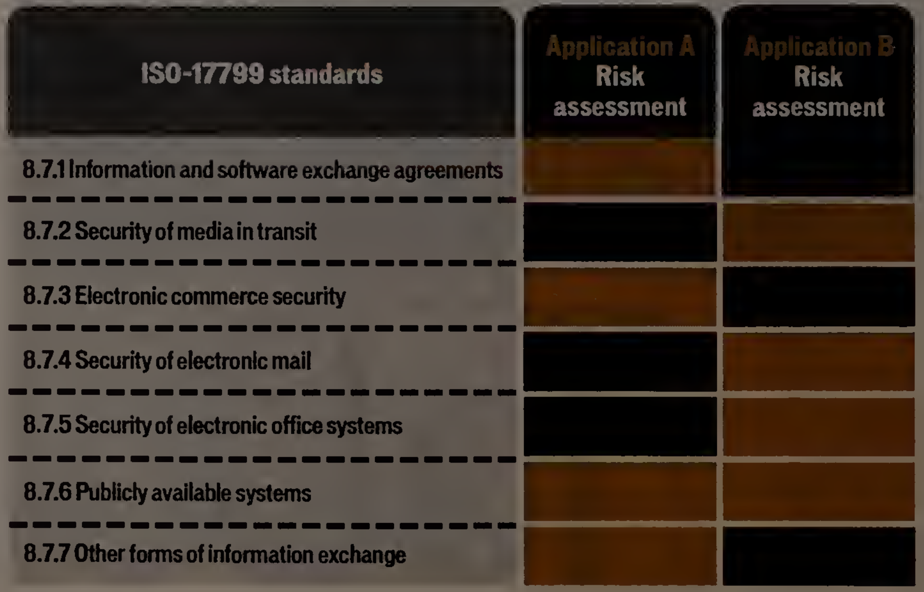
Base: [illegible]

SOURCE: AMR RESEARCH INC., BOSTON, OCTOBER 2003

Because of its casino business, Harrah's operates in 13 different regulatory environments simultaneously, and each has slightly different requirements. Boushy realized years ago that if he had to choose between meeting regulatory mandates and getting business projects done, the business would be poorly served. "If you're forced to trade off, you may have to choose on the side of the regulatory requirement," Boushy explains. "But instead of getting into that choice, by investing in resource augmentation you allow yourself to handle both."

Red Alert

With help from the Forsythe Solutions Group, finance giant CIT Group was able to establish priorities about which security problems should get attention first. In this simplified version of a chart for two CIT applications, the results of a security audit were mapped to the ISO-17799 security standard and the risks were color-coded **red (high)**, yellow (medium) or **green (low).**



ISO-17799 standards	Application A Risk assessment	Application B Risk assessment
8.7.1 Information and software exchange agreements	🟧	⬛
8.7.2 Security of media in transit	⬛	🟧
8.7.3 Electronic commerce security	🟧	⬛
8.7.4 Security of electronic mail	⬛	🟧
8.7.5 Security of electronic office systems	⬛	🟧
8.7.6 Publicly available systems	🟧	🟧
8.7.7 Other forms of information exchange	🟧	⬛

By augmenting staff to tackle the business project, you enhance revenue, improving your financial position and making it easier to continue to do more, he says. "As result, you start to loosen the budgetary constraints that surround IT."

Recently, staff augmentation enabled Boushy to finish in six months a comprehensive customer-rewards project that had been estimated to take nine to 11 months. He worked with Sapient Corp. in Cambridge, Mass., and Infosys Technologies Ltd. in Bangalore, India, to carve the project into portions for internal, external and offshore people. "Not only did we augment from a pure numbers standpoint," he says, "but when we went to bed, people in India were just getting up, so we were able to do in a 24-hour period almost twice as much work."

Boushy cautions, however, that staff augmentation is a long-term approach. "We worked with Sapient for five years and Infosys for three years prior to doing the project I described," he says, adding that it takes time to develop a good working relationship. "If you don't give it time, you're likely to hit more bumps in the road," he says.

But what if you lack the budget for extra resources? Boushy says if you can show the real value of IT investments, the money will be there. He's been able to do that with a very robust financial-projection, monitoring, measuring and tracking capability. That enables him to see exactly what a project costs, then track the business value it creates. Every year he reports on how IT investments are doing. "We're constantly evaluating our investment in information technology, just as you would evaluate how your stocks are performing," he says. "And we make decisions going forward based on that. IT is seen as investment from which we expect to receive internal rate of return just as we do from building a new hotel."

Tracking is essential to good prioritization, Holley says. "You've got to have a way to measure projects to see if you made the right decisions," she says. "If you don't keep score on whether you got business value from projects, how will you know how to prioritize projects in the future?" **43236**

Melymuka is a Computerworld *contributing writer. She can be reached at kmelymuka@yahoo.com.*

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ONE VERSION OF THE TRUTH

Getting there takes more than sophisticated business intelligence software. It takes data quality and political battles, too.

BY JULIA KING

FERRUCCIO SARDELLA

TALK ABOUT CHAOS. For decades, corporate executives have made strategic business decisions based on information deduced from multiple reports that IT compiled by summarizing sets of frequently conflicting data.

Business intelligence systems promise to change that by, among other things, pulling data from all internal systems plus external sources to present a single version of the truth. This truth can then be delivered to decision-makers in the form of answers to highly strategic questions such as "How many customers spend more than $1 million with our company?" or "Which clients are most likely to respond to our latest marketing campaign?"

By 2005, market research firm IDC projects the worldwide market for business intelligence software will total about $6 billion — up from $2.5 billion this year — signaling a voracious user appetite for the truth. But getting there isn't just about buying and deploying new software tools. Instead, it involves an arduous data-modeling effort upfront, and that can trigger widespread political battles and numerous other challenges. Here's a rundown of not-so-predictable gotchas and how some veteran users of business intelligence systems overcame them.

1 RARELY, IF EVER, IS THE TRUTH IN PLAIN SIGHT.

Truly valuable business information must be mined from disparate and "dirty" data that resides in multiple, incompatible computer applications and databases. Fair warning: It takes many months and requires paying militant attention to detail to combine and prepare the source data that will ultimately get you to a single version of the truth.

Pfizer Inc. needed to pull data from 14 systems, each of which handles a unique slice of the business, to come up with a comprehensive financial picture of the $32 billion pharmaceutical giant. In what turned out to be a false start, Pfizer's IT group began by creating software interfaces to link the 14 individual systems to a data warehouse, which was conceived as a single source of financial information. The problem was that business and financial terms were defined differently within each of the contributing systems.

"You put all the data together and you've won the battle, but lost the war," notes Danny Siegel, senior manager of business technology at New York-based Pfizer. "It took us four months just to integrate a few sources." Lesson learned: Gathering the data in a single place is only half the battle. "We saw that we had to put in place some rigorous data standards. This kicked off a six-month, totally nontechnical effort to devise a set of standards that allows users to slice and dice data in whatever context they need it," Siegel says.

Tony LoFrumento, executive director of CRM at $19 billion Morgan Stanley, which created a database that provides a holistic view of each of the firm's 5 million accounts, advises others to pay more attention to information content than to its delivery.

"People talk about business intelligence and getting to one version of the truth, and what they usually think about first is the reporting tools," says LoFrumento. "The reporting tools are great, but without the right information and data infrastructure in place, you're just spitting back what users already know, in a nicer format," he says.

2 THE TRUTH IS A MOVING TARGET. Defining standard business and financial terms isn't a once-and-done undertaking. Asking the right questions is also an ongoing process. "There really never is an end to the process," says Rob Cox, director of financial planning at Baltimore-based Erickson Retirement Communities LLC, the country's largest developer of retirement housing, with 10,000 residents and 5,000 employees.

Cox's team took months to come up with standard definitions and reports as part of Erickson's implementation of analytical software from Hyperion Solutions Corp. But it wasn't long after the software was deployed that the balking began. "People came out of the woodwork to say they needed different definitions," Cox recalls. One department wanted to include depreciation in the net income calculation, while another department didn't.

WISH LIST

Users want the following from their business intelligence systems:

- The ability to run ad hoc queries
- Access to multiple databases
- Scalability, affordability and reliability
- Ease of integration with back-office systems

SOURCE: GARTNER INC., STAMFORD, CONN., 2003

In another case, top management asked to have general and administrative costs broken out from the lines of business in which they were reported and instead have them recorded in a stand-alone manner.

Rather than create a bunch of ad hoc reports to respond to every request, Cox set up a process under which all change requests are funneled to a committee in the financial group, which reviews and then approves or denies them. Changes are then made to the central database so that the new types of reports can be produced.

Even though the numbers may be broken out differently for different departments, they still roll up to a single bottom-line number for the entire company, Cox says. "It's more work, but it's always better to take the time and change things in the database. The truth is a moving target, and you've got to be willing to stop the presses and do the work to change the database, rather than allow every user to make overriding adjustments on their reports," he adds.

At AXA Financial Inc. in New York, a dedicated data management team within IT is responsible for what Marvin Rafe, IT director and chief architect, describes as "data stewardship." Whenever there are discrepancies across various lines of business, this IT team takes the issues to a cross-departmental data stewardship team for resolution.

3 GETTING TO ONE VERSION OF THE TRUTH IS A HIGHLY POLITICIZED PROCESS. There are two schools of thought on how to get all parties on the same page. The first is to have a strong executive sponsor who has the clout to enforce data standards and the reporting of agreed-upon key performance metrics.

The second, adopted successfully at $2.1 billion automotive retailer Pep Boys, is to appeal directly to end users, such as salespeople and managers in the field "who are starving for data," according to Bob Berckman, director of database services at the 595-store chain based in Philadelphia.

"Our original approach was to go to senior management, and they liked the concept of one version of the truth, but they couldn't focus on it long enough, and after a year, it just wasn't taking hold," Berckman recalls. "Also, the senior guys were being hand-fed the information they needed, so there was no need for them to go and get it."

So Berckman switched gears to a grass-roots approach, hitting up regional managers and individual store managers for support for the now 6-year-old business intelligence system.

"If they could get accurate information in a timely manner, it made their jobs easier," so their incentive to make the project work was greater, Berckman points out.

Before business intelligence systems, Pep Boys managers needed to call the store managers in their regions for financial information. Each store reported differently, plus they reported at different times, making an accurate, comprehensive regional sales report nearly impossible to put together. Now, all stores report data the same way at the same time. "Everyone is looking at the same numbers. There is no confusion. We have one version of the truth," says Berckman.

4 THE WHOLE TRUTH IS BEST DELIVERED IN CHUNKS AND DISCLOSED AT PRESCRIBED TIMES. "A few years ago, we started with wanting all data as real-time as possible," recalls Scott Hicar, CIO at disk drive manufacturer Maxtor Corp. "But we learned that you really only want to publish information at the rate it can be understood and used in decision-making. To have a new version of the truth every 15 minutes doesn't help anybody," he says. Milpitas, Calif.-based Maxtor had a major snafu with managers reading real-time updates of financial and operational reports at different times of the day.

Of course, the numbers varied, representing multiple versions of the truth, which created chaos, not clarity. The solution was to publish updates at specified times throughout the day.

Finally, IT shouldn't make any assumptions about the kinds of information business users will want next — another misstep Maxtor made early on in its business intelligence project.

"Once we saw where the business was going and the kinds of questions they were asking, we figured they'd want to see more detailed stuff, and we started building data marts based on that," Hicar recalls. "We tried to . . . get them to higher-value information faster, but we learned that IT can't give them the truth." In other words, IT tried to rush the delivery of complex information before the users were ready. They needed time to absorb business intelligence, one step at a time. 43119

WHAT USERS WANT

AT LANDSTAR SYSTEM INC., a transportation logistics company in Jacksonville, Fla., designated power users from the business provide ongoing help desk support to other users when business intelligence problems arise. The reason is simple, says Bob Leo, director of data management and administration at Landstar. "For any BI effort to be worth it, you have to have the business community take ownership of the process."

On the IT side, technology professionals are responsible for understanding exactly what business users require from a business intelligence system. This means understanding the kinds of business questions they need to answer and the kinds of data that will generate that information.

"Some of our challenge in IT has been being able to speak to users in business terms, which is very key to the success of a business intelligence project," says Leo. "We in IT can talk about dimensions and measures and columns and building cubes, but we've also had to learn how to adapt our terminology in the requirements-gathering process to talk about what the users do every day," he says.

– Julia King

REAL-TIME DATA

Is it too much of a good thing? See:

QuickLink 36917
www.computerworld.com

BI: Last to Leave

Consultant urges a go-slow approach to sending business intelligence functions offshore.

WILLIAM McKNIGHT

Title: President

Company: McKnight Associates Inc., Dallas

Employees: 10

Accomplishments: Founded his consulting firm six years ago and specializes in data warehousing and CRM initiatives. He's a columnist for *Data Management Review* and an industry conference speaker and teacher.

Companies are outsourcing IT initiatives overseas to save costs, but is it worth it to send business intelligence activities offshore? The costs and benefits of such programs are difficult to pin down even when they're kept in-house. Data management consultant **William McKnight**, *president of McKnight Associates Inc., says the offshoring trend will likely hit BI in the next few years. In the meantime, he recommends that companies take it slow and stick to an onshore/offshore model, in which the project managers, integrators and architects are homebodies so they can maintain some control over the projects, while only routine tasks are done offshore. Jean Consilvio talked with McKnight about how companies can assess their readiness to outsource such a core business function.*

Q&A

Why not send BI overseas? It's probably not a good first target for offshoring. Data warehousing and BI is very iterative and business-focused — it's not a technical exercise. That's why we got into so many failures early on, because we treated it like a technical exercise.

It's important that most of the [staff] on the project have business knowledge. And it's also a best practice to have a small team of five to seven that acts as a SWAT team and continually executes on deliverables, as opposed to — what I think is a poor practice — having a 25- to 50-person data warehousing team. Until you have your processes efficient, having that many people is just adding to inefficiency.

The offshore model makes sense when you have larger projects. If you consider that maybe 2005 or 2006 will be about when offshoring best practices emerge for technology-related projects, you're probably looking at another year or two before offshore BI has best practices.

How are companies deciding whether it's financially worthwhile to go offshore? How you deliver is a TCO question, it's not an ROI question. It has everything to do with the investment, but the business targets don't change, regardless of the delivery mechanism. And so offshoring, if viewed as a lower-cost approach, will increase your ROI because you'll have lower costs. But it won't do much for your returns except put them at a slightly higher risk, because the delivery may not work as expected unless you employ best practices.

What are some of those best practices? Set up tight specifications, and don't expect too much first off. I would recommend starting with a staff-augmentation-type approach and growing from there. Set up service levels, and set your expectations appropriately and ease into it. Keep an onshore presence for the business knowledge.

Why keep that onshore? BI is very business-focused. We develop something quickly, we put it out there and get user feedback. We enhance it, we improve it, and then we move on to the next target and do the same thing with that, while continually supporting what we've put into production. So that life cycle is very quick-turn. That means the development team has to be reactive to the feedback that we get on a day-by-day basis. A lot of the feedback comes in the form of business feedback, and it has to be translated to technical specifications.

If you're going to have offshore BI, you're probably looking at a best practice of doing that only if you have longer-term projects with more stable requirements. And you must have a willingness to specify those requirements to the degree necessary such that a technical person can act upon them without too much knowledge of your business.

What are the risks in offshoring BI? I think the biggest risk is that ETL [extract, transform and load], which is a huge part of data warehousing and BI, is vastly underestimated. And it's not solely a technical exercise. It has an equal component: business. So those rules for how the data should look for users should come from users. And you enhance the risk that the users will not be as involved as they need to be when you go offshore.

All risks are going to be in the semantic gap of what is expected and what is delivered. This is why the benchmarks and the preagreed criteria are so important to establish upfront.

Also, know how you're going to exit a contract before you enter.

How long are contracts? A company has to be very careful getting into offshoring of BI because it's very fluid, it's ongoing in nature, and it never ends. So to think that [a contract is] going to have a start date and an end date that's firm is probably going to lead [the relationship] in the wrong direction. And don't forget about making arrangements for ongoing support.

Should companies evaluate tools when going offshore? Tools are a means to an end, and you're negotiating for service delivery. I would want to audit what tools they're using, simply because if things go wrong and I need to take that onshore, I would want to feel comfortable that scalable tools were being used. But we also don't want to try to reengineer what the offshoring company is good at.

What skills do the in-house folks need to run offshore BI? The main skills are systems integration, project management, and managing to delivery. Somebody who's not a technician can perhaps do a better job at managing an outsourcing relationship, because they're managing to business deliverables. The same is true for work that's done in-house: Focus on the business deliverables. **42967**

Divvying Duties

Consultant William McKnight says data management activities requiring direct interaction with business users should be kept in-house, but the more technical chores like database administration tasks and online analytical processing could be handled offshore.

ON-SITE

- Set up benchmarking and service-level criteria
- Establish business rules
- Maintain (create/translate) business knowledge
- Involve users in data warehouse decisions
- Ensure application support after development

OFF-SITE

- Set up an enforcement mechanism for business rules
- Establish expertise in tools such as data cleansing, automated extractors, dashboards and real-time delivery
- Application development
- Application support and production maintenance

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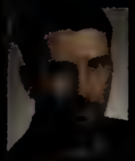

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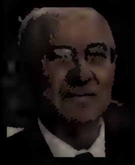

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NEWSMAKER

Earlier this month, LARRY BUETTNER started as CIO at Wheels Inc., a privately held company in Des Plaines, Ill., that handles corporate leasing and fleet management for about 240,000 vehicles. He previously was president of Anexsys LLC, a systems integration and payments company, where he helped implement the Electronic Federal Tax Payment System for the IRS in 1995. Buettner, 51, spoke with Jean Consilvio about his new job.

What lured you to this company? They are very customer- and quality-focused, and technology is a big part of what they're trying to do. It's got about 550 employees [including 100 in IT] and $1.5 billion in sales – the breadth and depth of a large company, but with a lot more personal touch and a clearer ability to contribute to its success, which sometimes gets lost in the shuffle at a large company.

What's your IT priority? We have a tremendous amount of data that we have accumulated from our fleet users, so it's how we can make that data available and usable at the fleet manager level to control costs and improve services. But [it's] also using new technology to extend services down to the driver, whether that be wireless or whatever we think of.

Can you give an example? Companies that have salespeople remotely dispersed need to keep in contact with them. We make sure that the vehicle is providing what's needed and we can communicate to resolve any service issues as quickly as possible.

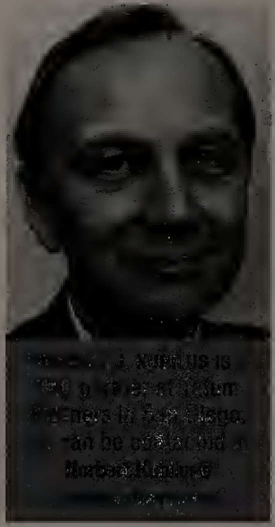
What are your challenges? When you have a massive amount of data, how you organize it and use it is the biggest challenge. . . . So moving from big databases to data marts.

Do you have a database in place? A very focused and deep system that has been tailored to the fleet business. We're approaching 65 years' existence as a company, so it incorporates all the business rules we've collected over that time. That's what makes us valuable to our customers: Our understanding of the business is well captured in the system. 43613

NORBERT J. KUBILUS ▪ PEER TO PEERS

Grooming the CIO's Successor

INFORMATION TECHNOLOGY organizations that fail at succession planning falter when the CIO leaves — which occurs with greater frequency than with any other top executive position. Although it appears to have stabilized in recent years, the average CIO tenure remains between 18 and 36 months. In comparison, the average tenure of a chief financial officer is closer to five years.


[illegible] J. KUBILUS is [illegible] in San Diego, [illegible] can be contacted at [illegible]

Understandably, with myriad IT issues and projects competing for attention, succession planning isn't high on the CIO priority list. That's a human resources function, right? Maybe it is for a CIO in a company that has a formal succession-planning process, but less than one-third of U.S. companies actually do executive succession planning.

Even when HR takes the lead, the CIO is an integral part of the succession-planning process. In fact, it's the CIO's responsibility to ensure that the company has the IT leadership and management talent to sustain growth and profitability if the CIO should make a sudden departure.

An IT succession plan is closely related to the IT strategic plan, which sets forth the direction of the IT organization and how it aligns with the company's business goals. Simply put, the succession plan specifies how the human resources in the IT organization will evolve to achieve that strategic vision.

The first step in succession planning is to predict the technology leadership and business management talent that the IT organization will need three to five years out. Next, come up with a list of qualifications for the future CIO and key IT managers in terms of experience, knowledge, skills and abilities.

Then, each member of the current leadership team should be compared against these qualifications. Because of the sensitivity of the subject, the CIO may consider engaging outside assistance. This phase can be accomplished in about four to six weeks, involving one to two days per week of effort.

The next step is for the CIO to identify one to three potential successors (either internal or external) and to evaluate each one's level of readiness to move into the CIO role. This effort should be repeated for the next level down in the IT organization as well.

While the CIO owns the succession-planning process, HR's assistance is invaluable in helping to groom potential successors. Working with HR, the CIO should prepare an individual development plan for each candidate. The plan should detail how that person will acquire the requisite experience, knowledge, skills and abilities to move up in the IT organization. A periodic progress review is also necessary — at least annually, but every six months is better.

There are several ways to develop a succession candidate. One is formal training to learn more about what it takes to be a CIO and how to prepare for this position. Options include seminars and courses offered by the American Management Association, the intensive nine-month Regional Leadership Forums sponsored by the Society for Information Management, or one of the CIO "boot camps" sponsored by Gartner and others.

But formal training is only part of the process. Candidate development often includes planned job rotations within the IT department — for example, senior directors rotating through computer operations, application development, telecommunications and planning functions — as well as opportunities to gain experience in other departments, such as finance and administration, or in specific business units. Also, mentoring candidates in areas such customer service, vendor management, contract negotiation, business consulting and project management can help round out their skills.

Some CIOs may feel threatened by the concept of CIO succession planning, viewing the succession candidates as a replacement threat rather than part of a backup plan for orderly succession. But developing one or more strong candidates demonstrates that the incumbent CIO is concerned about the continuity of IT leadership and about protecting the company's technology investment. Having a ready successor may also allow a CIO in a larger or growing enterprise to move into another executive role — without having to leave the company or leave the IT organization with weak leadership. 43409

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Programmer Analyst: Plan, develop, test and document computer programs. Send resume listing position sought to: Human Resources - Programmer Analyst Position, 4636 Hilton Corporate Drive, Columbus, Ohio 43232. EOE/F/M/V/D/Legal workers only please.

S/W Localization Engr: Real Idea is hiring engrs to evaluate localized s/w interface & h/w. Min reqt: BSCS + 2 yrs s/w dev exp. Job duties listed on www.realidea.com/careers. Send resume to ri-jobs@realidea.com or 1720 S Amphlett Blvd, #255, San Mateo, CA, 94402

Application Development Analyst - AstenJohnson, Inc. is seeking qualified applicants for positions at the company's North American headquarters in Charleston, South Carolina. The position's role is to design, configure, and deploy the Documentum 5 and eRoom 7 platform for content management and business collaboration. Requires bachelor's degree or foreign degree equivalent in Business, Information Management or related field and relevant applications development/deployment experience using Documentum and eRoom solutions. Apply to: Connie Wilson, Human Resources Team Leader, AstenJohnson, Inc., 4399 Corporate Road, Charleston, SC 29405.

Prog. Analysts to analyze, design, develop appls using: C, VB, JavaScript, HTML/DHTML, EJB, JSP, ASP, Servlets, UML, Oracle, SQL under Windows OS; perform initial study of req and provide feedback; provide on site maintenance support, debug, modify, fine tune and perform code optimization. Require: BS or foreign equiv. in CS/Engg.(any branch) & 2 yrs of exp. in IT. High Salary. Travel Involved. F/T. Positions available in Elgin, IL and Lower Gwynedd, PA. Resume to: HR, Fourth Technologies, Inc., 1108 N. Bethlehem Pike, Suite 8, Lower Gwynedd, PA 19002. Specify location desired on resume.

Programmer/System Analyst wanted by Technical Consulting Co in CA to review comp systm capabilities, workflow & limitations to determine if requested s/ware dvlpmt & modifications are possible within systm. Dsgn modifications & upgrade existing s/ware systm in UNIX envrmt. Must have Bach or equiv in Comp Sci & 2yrs exp in job offd or in related position in prgmg, systm analysis or as Network Administrator. Respond to Mr. Manuel Quiogue, VP, Tech Pacific Corp, 813 Ram Lane, Foster City, CA 94404. No calls.

Quality Assurance Engineers needed. Seeking candidates possessing BS or equivalent and relevant work exp. The relevant work experience must include 3 years working with Microsoft Windows and Unix. Duties include: Designing and implementing quality control tests, procedures and standards, Plan and direct activities concerned with development, application and maintenance of quality standards for software products. Work with Visual Basic, Microsoft Windows, Unix, Oracle, MSQL Server Win Runner and TestTrackPro. Mail resume, references and salary requirements to: Datacert, Inc., 3100 Timmons Lane #310, Houston, TX 77027.

Software Engineers needed. Seeking qual. candidates possessing MS or equiv. and/or rel. work exp. Exp. must include 2 yrs working with Linux & Perl. Travel as required. Duties include: Design, create, & modify computer programs; Maintain web based Interface; Collect & analyze user requirements. Work w/ Linux, Perl, PHP, MySQL. Send res., ref. & sal. req. to Lindows.com Inc., Attn: Webdev 01, 9333 Genesee Ave., 3rd Flr., San Diego, CA 92121.

Mercury Interactive is the global leader in business technology optimization (BTO) software. Our integrated suite of enterprise testing, production tuning, and application performance management solutions helps companies fully unlock the value of their IT investments. With Mercury Interactive, customers can measure the quality of their IT-enabled-business processes, maximize technology and business performance at every stage of the application lifecycle, and manage their IT operations for continuous improvement.

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- Technical Course Developers
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Please send resume to Mercury Interactive Corporation with cover letter to Human Resource Dept. fax: 408-822-5514, jobs@merc-int.com or mail your resume to 1325 Borregas Avenue, Sunnyvale, CA 94089. Mercury Interactive Corporation is an equal employment opportunity emplcyer committed to the development of a diverse workforce.

MERCURY INTERACTIVE

Seeking qualified applicants for the following positions in Memphis/Collierville, TN: Senior Programmer Analyst. Formulate/define functional requirements and documentation based on accepted user criteria. Requirements: Bachelor's degree or equivalent in computer science, MIS, engineering or related field plus 5 years of experience in systems/applications development. Experience with object-oriented programming languages, application server technologies and a Java Messaging System also required. *Master's degree in appropriate field will offset 2 years of general experience. Submit resumes to Sibi George, FedEx Corporate Services, 1900 Summit Tower Blvd., Suite 1400, Orlando, FL 32810. EOE M/F/D/V.

Equity Finance Dvlpr wanted by Comp Systs Consulting Co in Manh. Design, implement & maintain back office systs, creating new modules for Swaps, funds & equities; provide tech solutions for trading systs; quant dvlpmnt & deployment work; dvlp analytics for mkt systs, algorithmic trading & real time risk. Bach in Info Systs or Comp Scl & 2yrs exp In job offered req. Respond to: SC/HR Dpt, PO Box 4241, GCS, NY 10163.

Vignette Content Management. Seeking Vignette developer with strong Java skills and experience creating Detailed Design Documents for Vignette. Submit resume and references to Trac USA 27 World's Fair Drive Somerset New Jersey 08873

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Systems Developer & Team Leader: Philly-area specialty work management solutions developer seeks a Systems Developer and a Team Leader to dev. Intranet-internet based tools for mgmt. of complex scientifc projects. Use RAID architecture, ASP, XSL-, SML-, CSS, Javascript, COM+, EAP-like SAP R/3, Visual Interdev, Visual Source Safe, XML Spy, SQL Server, Crystal Reports, Remote Scripting & UML in development process, incl. syst. doc. Both pos. require BS or equiv. in Comp. Sci or EE w/computer emphasis, Team Leader pos. require 3 yr exp in same/similar pos., Syst. Dev. position req. 2 yr in same/similar position. Fax resume ATTN: NK, Project by Web, 610-668-2157. No phone calls, principals only, on cover indicate which pos. you are applying for. Must be authorized to work in US for any employer.

Lead Java Developer (1) & Java developer (2 positions) in Bethlehem, PA

Responsible for programming, design and development using Java 2, J2EE, JSP, Servlets, HTML, Win2000/XP, IBM HTTP Server, Apache Server, SOAP, XML/XSL, Swing, MS SQL Server, IBM WebSphere, Borland Jbuilder, and Firepond Sales Performer Configurator (SPC) v10. Competitive salary, 40 hr. week, bachelors degree and three years experience required for all positions. Minimum six months project management experience for Lead Developer. Submit resume and cover letter (no phone calls) to Intelliquip, LLC., 1480 Valley Center Parkway, Bethlehem, PA 18017

We have multiple openings (nationwide) for IT professionals with Industry Exp.(Various skills combination reqd) in SCADA , GE XA 21 system Arch, VIM editor Design Patterns, UML, 3D Studio MAX, Corel Suite, Quark Xpress, Natural, 4GL, PL1, Assembler, EARL, EDI ABAP/4, Python, Java with DB2, Informix, Sybase, Adabas, Neuron Data, COM+, ATM, ACH, POS, CORBA, Web Services, XSTL, Mercury Suite, Compuware Suite and Rational Test Suite, Peoplesoft, Ariba, Tibco, i2, Clear Quest, StarTeam, SilverStream, Tapestry, Resign Project Management (PMP) with Conductra (preferred) ISO/SEI CMM/ SixSigma & ITIL/COBIT, Business Process Re-Engineering, Change Management, Business Analysis, Resource management, Procurement and RFP/RFQ/RFI development Some positions require MS or equival.with 2yrs of exp. Other require BS or equival in any of the above with 5years of exp. Foreign educ. Equiva. &/or combination of educ/exp Accepted Travel/relocation reqd. Send Resume & Salary expectations to Director -Consulting Services. FutureTech Consultants, LLC #330, Research CT, Ste300, Norcross, GA 30092

Programmers, Software Engineers & Oracle/Apps. (Cary, NC): Design, develop, test apps in (1) J2EE, Versata Logic Suite, workflow engine in DB2 & Websphere on Unix from SAP and other legacy apps. migration; Oracle/Apps. 11i & rel. tools, RMAN, SQL Server Admin., Clarify, Oracle Financial Apps., Shell Scripts, Silverstream, Weblogic, Apache in various OS. Travel to Client Sites reqd. Prevailing wage. Mail resume to: HR, 2415 San Ramon Valley Blvd., Suite 4140, San Ramon, CA 94583. EOE.

Software Professionals:
RS Software, a leading, globally positioned software development & consulting firm needs software professionals with exp. in the following skill mixes: Systems Analysts: Oracle, Unix, SQL Server, MPEX, MVS & DB2 Programmer Analysts: Assembler, C, C++, TPF & Windows. Business Systems Analysts: Requirement Analysis, marketing of customer specific IT solutions, liaise between multinational clients & IT professionals, preparation of project plans & technical proposals, assess customer satisfaction. IT-Technical Services Coordinators: Liaise with in-house IT directors & with the directors of the consulting services at multinational clients to coordinate & optimize IT services & minimize aggregate IT operational costs through appropriate triangulation of in-house contractors, domestic outside & overseas out-source. Undertaking of major infrastructures, IT developments & modifications & update technical innovations Send resume to: HR, RS Software (I) Ltd. 1900 McCarthy Blvd., # 103 Milpitas, CA 95035

IT Manager, Accounting-Analyze company's requirements & procedures in accounting operations & design, develop, & modify company's accounting software systems to meet its needs Supervise employees who use the systems. Req'd: Bach. Deg in Accounting or Finance, 2yrs exp in the job offered or in a business applications occup., & exp with & certification in Great Plains (Microsoft Business Solution). Resume to: Takara Belmont USA, Inc., 101 Belmont Dr., Somerset, NJ 08873-1204 Attn: R. DiPiazza

Manager, E-Commerce and Web Development

Sennheiser Electronic Corporation has an opening in its Old Lyme, Connecticut office for a Manager, E-Commerce and Web Development.

Conceptualizes and creates the marketing, media and business content to be placed on the company's website. Localizes existing German websites and online applications including their conventions and nomenclature to be suitable for the local U.S. market. Organizes editorial revisions of foreign language (German) electro-acoustic product information, press releases and promotional content to be published on the company's U.S. website. Forecasts and analyzes marketing, finance and other electro-acoustic industry related business conditions affecting current and future marketing policies. Analyzes, develops and implements web based marketing and media content to improve marketing strategies and promotional programs.

Must posses at least a bachelor's degree or its equivalent in Economics, Marketing or a related field and relevant work experience, including experience in field of Content Migration and Localization of foreign language (German/English) Internet Applications and technical ability to maintain, manage and develop corporate Internet resources such as web, mail, ftp servers and content management systems.

Resume and/or cover letter must reflect each requirement above and specify reference code MEWD/MGA or it will be rejected.

Forward resume to HR Department, Sennheiser Electronic Corporation, One Enterprise Drive, Old Lyme, CT 06371

Technical Analyst: Design/Configure voice networks using Siemens Switches (hecom & hipath) & Data networks using Cisco routers, switches & firewall for new property mgmt bldg; Service & Support existing properties; Customize new applications per requirement of multi-tenant bldg.; Create new application software (using Java XML, Visual Basic, C++) to interface customized application with Telecom hardware & software equip. Req.: B.S. Degree or Equiv in Acctg. or Comp Sci & 2 yrs relevant exp., or will accept 3 yrs univ. studies in Acctg. or Comp Sci., & 3 yrs relevant exp in lieu of B.S. plus 2 yrs exp. Relevant experience must incldg core duties & technologies described above. 40 Hrs/Wk. Competitive Salary. Must have proof of legal authority to work in USA. Send resume to: K. Hutchinson, MSI Properties, 164 Main Street, Dubuque, IA 52001.

SENIO SOFTWARE ENGINEER to design, develop, test, maintain and implement web-based application software using Java, ATG Dynamo, DCS, DAS, Oracle, JSP and Java Script under Sun Solaris operating system; Supervise and mentor junior programmers and engineers. Require: B.S. degree in Computer Science, an Engineering discipline, or a closely related field with 5 yrs of exp in the job offered. Competitive salary offered. Apply by resume to: Dave Bloomquist, Global Software Development Services, Inc.,10 South 5th St., Ste. 700, Minneapolis, MN 55402; Attn: Job DS.

PROJECT MANAGER to supervise and lead a team in the design, development, implementation and support of Supply Chain and Enterprise Application Integration systems using Tibco, BizTalk, Viewlocity, CAPS Logistics, SAP, JD Edwards, EJB, Servlets, JSP, MQSeries, Web Methods, J2EE, Java, under SUN Solaris, UNIX, Linux, and Windows NT/2000 operating systems; determine best methods to fill technology gaps within individual business process models and define the strategy behind protocols (http, SOAP, Web Services), payload standards (EDI, ebXML, XML, BPML) and next generation supply chain architecture; define and develop baseline project plans; supervise and mentor technical implementation professionals. Require: M.S. degree in Computer Science, an Engineering discipline, or a closely related field, with two years of experience in the job offered or in the related occupation of Software Consultant. Extensive travel on assignment to various client sites within the U.S. is required. Competitive Salary Offered. Send resume to: Vishy Dasari, Objectnet Technologies, Inc., 1117 Perimeter Center West, Suite E104, Atlanta, GA 30338. Attn: Job AT.

JRD Systems Inc., has multiple openings available for IT professionals including software engineers, consultants, programmer analysts, project leaders/managers, account managers, Database Administrators, systems/management analysts, web masters/designers & project engineers. Some positions req Bachelor's Degree (or equiv.) while others require Master's Degree (or equiv.) in C.S., Eng'g, info Systems, Math, Bus Admin or related field. We will accept the foreign equiv. of the required education and/or its equiv. in edu. & exp. Exp. required will depend on the position. Travel on some assignments to various client sites within the U.S is required. Send resume to HR, JRD Systems, 42524 Hayes Rd, Suite # 100, Clinton Twp, MI 48038.

SOFTWARE ENGINEER to design, develop, test, maintain, implement and support web-based application software in a client/server environment using ASP.NET, VB.NET, C#, Java, JSP, VB, ASP, SQL Server, Oracle, JavaScript, VBScript, COM+, SOAP, Web Services, Cobol, DB2 and CICS on Windows platform. Require: M.S. degree in Computer Science, an Engineering discipline, or a closely related discipline with 2 yrs of exp in the job offered. Extensive travel on assignment to various client sites within the U.S. is required. Competitive salary offered. Apply by resume to: Ravi Kandimalla, President, Everest Computers Inc., 900 Old Roswell Lakes Parkway, Suite 300, Roswell, GA 30076; Attn: Job YS.

International Programming & Systems, Inc. has various opps for Analysts/Programmers with the following skills: Visual Basic 6.0; Visual C++; C#; Javascript; VBScript; ASP; SQL Server; HUON, Oracle HRMS; Oracle Apps 11i; MQ Series; MQSI; Oblix Identity Mgmt; Corillian Voyager. Positions are nationwide inc. Seattle, WA, NJ and CA. IPS also has Sales and Recruiting positions in our S.F. office. Electronic responses are encouraged, cflavell@ipsamerica.com or mail resume to IPS, 1875 So. Grant Street, #300, San Mateo, CA 94402 (Fax) 650-572-8679. Principals only please.

Software Engineer-Develop, create, modify computer syst/apps software & specialized utility programs. Analyze, design databases within an application area. Analyze user needs, develop software solutions using Enterprise Resource Planning (ERP) & related software. Bachelor's degree or foreign equiv. Will accept 3 yrs undergraduate study & 3 yrs exp as computer professional in lieu of Bachelor's degree. Degree must be in CS/CA, Eng., Chem., Math, Physics, or scientific/business field. Must have I yr exp using SAP, BAAN, PeopleSoft, Oracle Applications/ Financials/ Manufacturing/HR. Extensive travel, frequent relocation required. $65K/year, 40 hrs/wk EEO/AAP/M/F/V/H Submit resumes to Site Director, Pittsburgh/ Allegheny County CareerLink, ATTN: CL Program Supervisor, 425 6th Ave, Suite 2200, Pittsburgh, PA 15219-1837 Job Order No WEB379183

Software Engineer-Develop, create, modify computer syst/apps software & specialized utility programs. Analyze, design databases within an application area. Analyze user needs, develop software solutions using Relational Database Management Systems (RDBMS) & related software. Bachelor's degree or foreign equiv. Will accept 3 yrs undergraduate study & 3 yrs exp as computer professional in lieu of Bachelor's degree. Degree must be in CS/CA, Eng., Chem., Math, Physics or scientific/business field. Must have I yr exp using Informix, Oracle, FoxPro, Sybase, SQL Server or Progress. Extensive travel, frequent relocation required. $65K/yr 40 hrs/wk. EEO/AAP/M/F/V/H Submit resumes to Site Administrator, Greene County CareerLink, 4 W High St, Waynesburg, PA 15370-1324 Job Order No WEB379167

APPLICATION SOFTWARE ENGINEER

A well-established company in California has immediate opening. Design, write, test & support complex software programs using Peoplesoft ERP & related software. Analyze &design systems/applications. Extensive programming/debugging/testing of systems & applications. Make changes to Peoplesoft Internet app. using Peopletools & SQL. BA/BS Computer Science or related curriculum. Min. 3 yrs related exp. as Software Eng. using Peoplesoft ERP. Proficient in Peopletools/ SQL/SQR/ PeopleCode/ App Engine,/App Designer. Familiar with Query, Nvision, Excel & Excel Macros. Send resume: HR/IT Dept., PO Box 1230, Stockton, CA 95201-1230, Fax (209) 466-2604, e-mail sdrew@duraflame.com EOE

Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in WebLogic, Oracle, HTML, ATG and Erwin. Requirements: Bachelor's Degree, educational or functional equivalent, in Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of WebLogic, Oracle, HTML, ATG and Erwin. Salary: $66,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Site Manager, Armstrong County Career Link, 1270 North Water Street, PO Box 759, Kittanning, PA 16201, Job No. WEB3801128.

Electronic Commerce Manager for Hughes Supply, Inc.: Manage through other managerial personnel the operations of Electronic Commerce within the Systems Development and Integration Dept., implement E. Commerce projects, work with vendors, and customers to determine E. Commerce requirements and strategy. Bachelor's Degree in MIS or equivalent, plus four years of experience as senior programmer analyst. Knowledge of wholesale distribution and supply chain software, PICK /Universe, Java/J2EE, EDI, XML and web development including HTML and Visual Basic/ASP required. Competitive salary. No job contractors.

Send resume to:

Hughes Supply
Director of Systems
Development & Integration
1 Hughes Way
Orlando, Florida 32805

Software Engineer-Develop, create, modify computer syst/apps software & specialized utility programs. Analyze, design databases within an application area. Analyze user needs, develop software solutions using Internet Applications & Internet Software. Bachelor's degree or foreign equiv Will accept 3 yrs undergraduate study & 3 yrs exp as a computer professional in lieu of Bachelor's degree. Degree must be in CS/CA, Eng., Chem., Math, Physics, or scientific/business field. Must have 1 yr exp. using 2 of A & 1 of B, or 2 of A & I of C: A) ASP, HTML, CCGI, PERL, MTS, IIS B) JAVA, JAVASCRIPT, JAVABEANS C) COLDFUSION, BROADVISION, ATG DYNAMO, NET DYNAMICS, WEBSPHERE, FRONT PAGE. Extensive travel, frequent relocation required. $65K/yr 40 hrs/wk. EEO/AAP/M/F/V/H Submit resumes to Site Manager, Armstrong County CareerLink, 1270 N. Water St, PO Box 759, Kittanning, PA 16201-0759 Job Order No WEB379181

Engineer – Web Hosting Infrastructure

CSC has an Engineer – Web Hosting Infrastructure position available in **Newark, Delaware.** Design architecting/engineering solutions for an Intranet & Extranet environment Including: PERL & UNIX Scripts, Sun Solaris OS, Networking, DNS & TCP/IP, Remote Access Solutions, GLOG GC3 Application Software, JRUN Application Server software, LDAP 24x7 on-call rotation; averages 20 after-hours calls/month working on escalation issues. Requires BS or equivalent & relevant experience. Submit cover letter & resume to **CSC, HR, 400 Commerce Drive M/S 1SB6, Newark, DE 19713.** Reference job code **BP0S2705** in cover letter.

CSC

Sr. Applics. Ntwrk Consulting Engr. Framingham, MA. Architect & support IT infrastructures to prevent error recurrences of client's ntwrk. Integrate global sol'n into local envmmt. Determine failures & resolve remotely & effectively meeting customer's SLA's. Collaborate w/multi-vendor Level3 resources to diagnose & resolve tech. faults. Work with CISCO routers and switches, CPE eqpmt, UNIX, IBM Centric ntwrks, Commercial Packet Sniffers. REQUIRES: Bach's (or equiv educ & exp) In CS or EE plus 3 yrs exp In job off'd or as Sr. Ntwrk Engr. Cisco CCIE. Exp., which may be concurrent, must Incld. 3 yrs exp. each w/UNIX, IBM Ntwrks and Security. Mail resumes to D.Schofield, DiData, 135 Newbury Rd., Framingham, MA 01701.

SOFTWARE ENGINEER to design, develop, implement and maintain complex web_based e_commerce and enterprise application integration applications software in a client/server environment using Object oriented technologies, Rational Unified Process, UML, C++, Java, J2EE, EJB, Servlets, JSP, JFC/SWING, JMS, WebLogic, WebLogic Integration, Corba, XML/XSLT, SQL/PLSQL, Rational Rose, and Oracle under SUN Solaris, UNIX, Linux, and Windows NT/2000 operating systems. Require: B.S. degree in Computer Science, an Engineering discipline, or a closely related field, with three years of experience in the job offered or as a Programmer Analyst. Extensive travel on assignment to various client sites within the U.S. is required. Competitive Salary Offered, 8:00 am to 5:00 pm, M-F. Send resume to: Vishy Dasari, President, Objectnet Technologies, Inc., 1117 Perimeter Center West, Suite E1C4, Atlanta, GA 30338. Attn: Job AP.

SOFTWARE ENGINEER to design, develop and test embedded state machine closed loop control system, Boot-loaders, Chip level Drivers and Real Time Operations System (RTOS) software for microcontroller based DC & AC Motor Controllers using C and Assembly; Implement and design software for SPI, I2C and RS232 based applications; Implement serial and parallel data transfer techniques and perform integrity checks. Require: B.S. degree in Computer Science, an Engineering discipline, or a closely related field with 1 yr of exp in the job offered. Competitive salary offered. Send resume to: HR, Curtis PMC, 235 East Airway Blvd., Livermore, CA 94551; Attn: Job RP.

Software Engineer-Develop, create, modify computer syst/apps software & specialized utility programs. Analyze, design databases within an application area.Analyze user needs, develop software solutions using Siebel & related software. Bachelor's degree or foreign equiv. Will accept 3 yrs undergraduate study & 3 yrs exp as computer professional in lieu of Bachelor's degree. Degree must be in CS/CA, Eng., Chem., Math, Physics or scientific/business field. Must have 1 yr. exp. using Siebel CRM & related software. Extensive travel, frequent relocation required. $65K/yr 40 hrs/wk EEO/AAP/M/F/V/H Submit resumes to Fayette County CareerLink, ATTN: CareerLink Program Supervisor, 135 Waylan Smith Dr, Uniontown, PA 15401 Job Order No. WEB379171

Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Semaphores, Mutexes, Informix and Tuxedo. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of Semaphores, Mutexes, Informix and Tuxedo. Salary: $66,000/year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours/week, involves extensive travel and frequent relocation. Apply: Fayette County CareerLink, Attn: CareerLink Program Supervisor, 135 Waylan Smith Drive, Uniontown, PA 15401, Job No. WEB380107.

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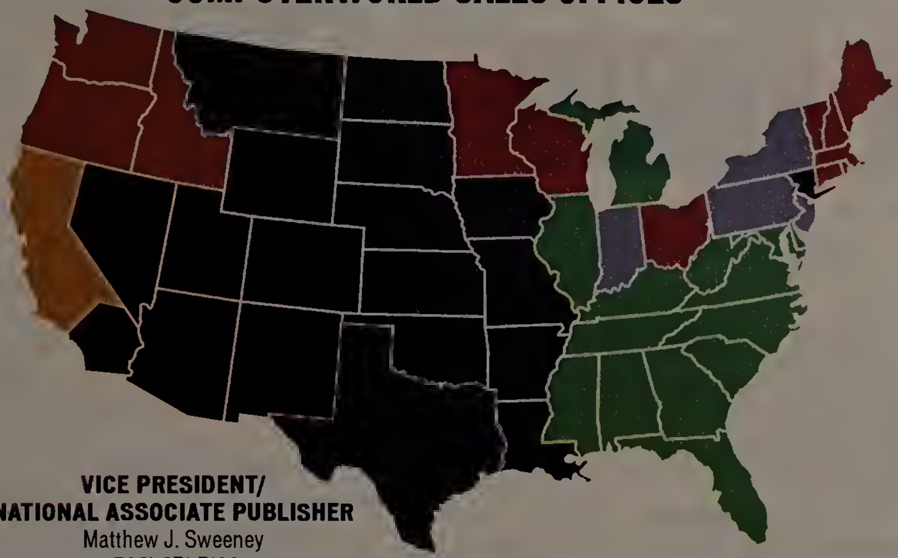
COMPUTERWORLD SALES OFFICES



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ADVERTISER'S INDEX

1 & 1 Internet **www.1and1.com**	26-27
American Power Conversion **www.apcc.com** **888-289-APCC**	9
Best Places to Work in IT **www.computerworld.com**	51
Canon **www.imagerunner.com**	18-19
Comnet 2004 **www.comnetexpo.com**	43
Computer Associates **www.ca.com**	4
Dell **www.dell.com**	52*
EMC **www.emc.com**	17
Fujitsu **www.us.fujitsu.com**	25
IBM Rational **www.ibm.com**	31
IBM Storage **www.ibm.com**	2-3
IBM Tivoli **www.ibm.com**	29
NetIQ **www.netiq.com**	22
Premier 100 IT Leaders Conference **www.premier100.com**	41
Samsung **www.samsungusa.com**	13
SAS **www.sas.com**	15
Snap Appliance **www.snapappliance.com**	37
Veritas **www.veritas.com**	11

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Page number refers to page on which story begins. Company names can also be searched at **www.computerworld.com**.

ACTIONAL CORP. 24
ACTUATE CORP. 34
ADVANCED MICRO DEVICES INC. 10,14,30
AGILENT TECHNOLOGIES INC. 20,35
ALIEN TECHNOLOGY CORP. 7
AMERICAN MANAGEMENT ASSOCIATION 42
AMERICAN MANAGEMENT SYSTEMS INC. 10
ANEXSYS LLC 42
ANTEC INC. 30
APPLE COMPUTER INC. 21
AXA FINANCIAL INC. 38
BEA SYSTEMS INC. 24
BEZEQ - THE ISRAEL TELECOMMUNICATIONS CORP. 28
BNP PARIBAS 6
BOSTON UNIVERSITY 49
BRUEL & KJAER NORTH AMERICA INC. 30
BUSINESS SOFTWARE ALLIANCE 1
CHEVRONTEXACO CORP. 8
CHRISTOPHER BEALE ASSOCIATES LTD 20
CISCO SYSTEMS INC. 12
CIT GROUP INC. 20,35
CITRIX SYSTEMS INC. 6
CLARK COUNTY SCHOOL DISTRICT 10
CLEARFOREST CORP 28
COGNIZANT TECHNOLOGY SOLUTIONS CORP. 49
COMPUTER ASSOCIATES INTERNATIONAL INC. 14
COMPUTER SCIENCES CORP. 12
CONNECTIX CORP. 1
CORNELL UNIVERSITY 28
CORPORATE INFORMATION SECURITY WORKING GROUP 1
COVALENT TECHNOLOGIES INC. 8
DAIMLERCHRYSLER AG 23
DAIMLERCHRYSLER SERVICES NORTH AMERICA LLC 23
DATAPOWER TECHNOLOGY INC. 24
DELL INC. 10
DELOITTE TOUCHE TOHMATSU 1
DELTA AIR LINES INC. 7
DFS GROUP LTD. 49
DHL WORLDWIDE EXPRESS INC. 10
DISTRIBUTED MANAGEMENT TASK FORCE INC. 10
EASTMAN KODAK CO. 8
EL-AL ISRAEL AIRLINES INC. 28
ELECTRONIC DATA SYSTEMS CORP. 8,20
ELECTRONIC INDUSTRIES ALLIANCE 1
EMC CORP. 1
ENTERPRISE APPLICATION GROUP 1
EPAM SYSTEMS INC. 8
ERICKSON RETIREMENT COMMUNITIES LLC 38
EXPERTCITY INC. 6
FALCONSTOR SOFTWARE INC. 8
FEDERAL ELECTION COMMISSION 1
FILENET CORP. 34
FKI LOGISTEX GROUP LTD. 7
FLEETBOSTON FINANCIAL CORP. 49
FORRESTER RESEARCH INC. 6
FORSYTHE SOLUTIONS GROUP INC. 35
FUJITSU COMPUTER PRODUCTS OF AMERICA INC. 8
GARTNER INC. 39,42,49
GE RESEARCH AND DEVELOPMENT CENTER 32
GLOBALSECURITY.ORG 10
GOOGLE INC. 8
GREEN PASTURE SOFTWARE INC. 8
GUARDIAN LIFE INSURANCE COMPANY OF AMERICA 49
HARRAH'S ENTERTAINMENT INC. 20,35
HEALTHAXIS INC. 1
HEWLETT-PACKARD CO. 6,8,10,14
HITACHI DATA SYSTEMS CORP. 1
HURWITZ & ASSOCIATES 6
HYPERION SOLUTIONS CORP. 38
IBM 1,6,8,10,14,20,23,24
IDC 8,14,38
ILLUMINATA INC. 1
INFORMATION TECHNOLOGY ASSOCIATION OF AMERICA 1
INFORMATION TECHNOLOGY INDUSTRY COUNCIL 1
INFOSYS TECHNOLOGIES LTD. 35
ING GROEP NV 8
ING U.S. FINANCIAL SERVICES 8
INTEL CORP. 10,14
INTERNAL REVENUE SERVICE 42
ISRAEL ELECTRIC CO. 28
ISRAEL NATIONAL COAL CO. 28
J.D. EDWARDS & CO. 7,14
J.R. SIMPLOT CO. 1
JUPITER RESEARCH 21
LANDSTAR SYSTEM INC. 39
LAYER 7 TECHNOLOGIES LTD. 23
LENDINGTREE INC. 23
LOGICLIBRARY INC. 8
LYDIAN TRUST CO. 23
MAJOR LEAGUE BASEBALL 6
MATRICS INC. 7
MAXTOR CORP. 38
MAXXAN SYSTEMS INC. 8
MCKNIGHT ASSOCIATES INC. 40
META GROUP INC. 1,7
MICROSOFT CORP. 1,6,8,10,12,14, 21,23,24,33,34,50
MLB ADVANCED MEDIA LP 6
MORGAN STANLEY 38
MOTOROLA INC. 12
MSI TECHNOLOGY CO. 30
NASDAQ STOCK MARKET INC. 14
NATIONAL SECURITY AGENCY 10
NETEGRITY INC. 24
NETFORENSICS INC. 33
NEXUS TECHNOLOGY BV 30
NORFOLK SOUTHERN CORP. 34
OFFICE DEPOT INC. 8
OPENNETWORK TECHNOLOGIES INC. 23,24
ORACLE CORP. 1,10,12,14,23
ORGANIZATION FOR THE ADVANCEMENT OF STRUCTURED INFORMATION STANDARDS 24
OSA TECHNOLOGIES INC. 10
PACIFIC GAS & ELECTRIC CO. 20,35
PEOPLESOFT INC. 1,7,14,34
PEP BOYS 38
PFIZER INC. 38
PHAOS TECHNOLOGY CORP. 24
PHYSMARK INC. 1
QUAKER CHEMICAL CORP. 7
REALNETWORKS INC. 6
RED HAT INC. 6
RSA SECURITY INC. 24
SAFELITE AUTOGLASS INC. 8
SALESFORCE.COM INC. 8
SANA SECURITY INC. 32
SANS INSTITUTE 33
SANTA FE INSTITUTE 32
SAP AG 8,20,24
SAPIENT CORP. 35
SAS AB 12
SATYAM COMPUTER SERVICES LTD. 1
SCS CORP. 7
SEAGATE TECHNOLOGY LLC 8,30
SERVGATE TECHNOLOGIES INC. 8
SETTLEMENT RECOVERY CENTER LLC 8
SISTINA SOFTWARE INC. 6
SOCIETY FOR INFORMATION MANAGEMENT 42
STARTECH.COM USA LLP 30
SUN MICROSYSTEMS INC. 6,8,10, 12,14,34
TATUM PARTNERS 42
TECHNET 1
TELRAD NETWORKS LTD. 28
THE SCO GROUP INC. 14,50
THE UNIVERSITY OF MEMPHIS 32
THE UNIVERSITY OF NEW MEXICO 32
THE WEATHER CHANNEL INC. 1
THE YANKEE GROUP 49
TRANSPORTATION SECURITY ADMINISTRATION 7
UNIVERSITY OF CALIFORNIA, LOS ANGELES 20
U.S. ARMY 10
U.S. CHAMBER OF COMMERCE 1
U.S. DEPARTMENT OF JUSTICE 33
U.S. DEPARTMENT OF DEFENSE 50
U.S. SECURITIES AND EXCHANGE COMMISSION 8
USG CORP. 35
VERISIGN INC. 24
VIRTUALBANK 23
VMWARE INC. 1
WAL-MART STORES INC. 50
WASHINGTON ALLIANCE OF TECHNOLOGY WORKERS 1
WASHINGTON STATE HEALTH CARE AUTHORITY 1
WESTERN DIGITAL CORP. 30
WHEELS INC. 42
WORLD WIDE WEB CONSORTIUM 24
ZALMAN TECH CO. 30

Continued from page 1

Offshore Labor

Similar bills restricting government offshore work are under consideration in New Jersey, Michigan, North Carolina and Indiana. Indiana made headlines recently when a state jobs agency signed a deal that could have brought in Indian coders [QuickLink 42838].

Tom Neitzel, the health care agency's IT manager, said that while he's aware of the political implications of the bid award, his agency has to make decisions based on a project's business case, not on where the work is performed. "There are very emotional issues associated with offshore contracting," he said.

The winning bid of approximately $3 million by Healthaxis Inc. — the Irving, Texas-based prime contractor that has been working with India-based outsourcer Satyam Computer Services Ltd. — was the only bid to come in under the $3.6 million budget set by the legislature for building a new insurance benefits administration system. Written proposals were received from PeopleSoft Inc., Oracle Corp. and Physmark Inc., and Deloitte Touche Tohmatsu.

The savings came chiefly from reduced salary costs, said Neitzel. For instance, Healthaxis listed per-hour rates for programmers at $34; other bidders' rates started at $178.

The contract, which was set at about $2.6 million after the state agency decided to take responsibility for purchasing the systems hardware, was signed in May 2002 with the expectation that the system would be in place by the end of June 2003. That deadline has been moved to next June.

But the delay is costing the agency about $1.4 million in maintenance and support costs for running its health benefits applications on a system hosted by another state agency, said Neitzel. That's money the Washington State Health Care Authority didn't expect to be paying.

Healthaxis isn't seeking additional money and has so far been paid just $930,000. Neitzel said it's to the firm's credit that it's sticking with its contracted cost.

The project's problems were revealed last week by the Seattle-based Washington Alliance of Technology Workers, which obtained state documents about the project and posted a detailed account about it on its Web site [QuickLink a3910].

The documents list problems with testing and design quality, as well as usability. In interviews, both sides cited issues with the project's requirements that may not have been evident at the outset. "This project was more than what both parties had anticipated," said Neitzel.

"This has been a large, complex project," echoed Emry Sisson, executive vice president of technology and operations at Healthaxis, who noted that this is his company's first project for a state government. "We maintain a good relationship with the state, and we are committed to delivering and meeting their systems needs. We remain convinced that we will be able to deliver the system."

> **" I could have had the same thing happening if everybody had been based in Dallas.**
>
> **TOM NEITZEL,** IT MANAGER, WASHINGTON STATE HEALTH CARE AUTHORITY

Although Neitzel doesn't blame offshore workers for the delay, he said there have been problems. While the workers have technical skills, they don't have insurance subject-matter expertise, he said. And that has affected testing.

Satyam spokesman Abhijit Roy said the company has sufficient experience and has "time and again demonstrated its business knowledge.

"Understanding unique and business-specific requirements on a project of this magnitude is not something that would be different for offshore vs. onshore technical personnel," said Roy.

But Stan Lepeak, an analyst at Stamford, Conn.-based Meta Group Inc., said concern about the business knowledge of offshore companies is a common complaint, especially as offshore firms increasingly take on more complex projects. Gaining that business knowledge "is a major challenge for them" and may lead to more acquisitions — both in the U.S. and among overseas companies — as they seek to add depth to their skills.

Asked what he's learned from the project, Neitzel said, "I would be certain that clear requirements, written requirements, are developed and agreed upon. Make sure that clear deliverable dates are documented and agreed upon by all. Assume nothing. That is what I am learning here, and it is being reinforced."

As for the effects of outsourcing the project, "I could have had the same thing happening if everybody had been based in Dallas," Neitzel said. **43685**

> **" I don't think that Washington state tax dollars should be used to create jobs overseas, when we've got skilled workers here.**
>
> **STATE REP. ZACK HUDGINS**

Researcher Says Offshore Moves Don't Lead to Big U.S. Job Losses

The number of U.S. IT workers losing their jobs because of offshore outsourcing is a topic that's open for debate. For example, a researcher at Boston University last week claimed that most tech staffers whose jobs get moved offshore are being redeployed in new positions.

Nitin Joglekar, an assistant professor of operations and technology management at BU's School of Management, estimated that 15% to 20% of IT workers typically are dismissed when their positions are sent overseas. But the remainder are given other responsibilities, said Joglekar, who has examined the impact of offshore outsourcing at large companies such as FleetBoston Financial Corp.

In some cases, programmers have become project managers or been put in charge of managing the relationships with offshore providers, Joglekar said. "Those people that were doing coding before are probably doing much more business analysis now," he said.

Different Findings

But Joglekar's findings are based on in-depth statistical analyses of just five companies, plus anecdotal information from about 15 others. They differ markedly from predictions made last summer by Gartner Inc., which said it expected that one out of every 20 corporate IT jobs in the U.S. would be moved offshore by 2005 and that less than 40% of the affected workers would be redeployed by their current employers [QuickLink 40344].

DFS Group Ltd., a San Francisco-based company that operates 400 duty-free retail shops at airports and other sites worldwide, sends some of its IT work overseas under a combined onshore/offshore IT services contract with Cognizant Technology Solutions Corp. in Teaneck, N.J.

CIO Ron Glickman wouldn't say how many IT workers DFS has let go or redeployed as a result of its deal with Cognizant. But shifting people into new jobs isn't always a good fit for employers or the workers themselves, he said.

"I do agree that some people have been repositioned to other activities in the companies that take advantage of global sourcing," he said. "However, my personal experience has been that the aptitudes and expertise required to move from one role to another are often different enough that training will not enable the impacted individuals to excel or be satisfied in their new roles."

Dennis S. Callahan, CIO at Guardian Life Insurance Co. of America, said the New York-based insurer also farms out some IT activities to companies with offshore operations. But only about 5% of its 400-person IT staff has been directly affected, according to Callahan.

"We've done offshoring, but in a way that's minimized the staff impact," he said, noting that U.S.-based Guardian employees make up half of the company's development team. Callahan said Guardian works collaboratively with its IT services partners and distributes development work across different geographic regions.

Andrew Efstathiou, an analyst at The Yankee Group in Boston, said Joglekar's job-loss estimates map with what he's seeing. But he added that it's unclear how many workers have been able to make immediate transitions to new roles at their companies.

– Thomas Hoffman

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FRANK HAYES ▪ FRANKLY SPEAKING

2004: It's IT's Turn

READY FOR 2004? It was supposed to be the year IT would come roaring back after the turnaround of '03. Trouble is, things didn't turn quite the way we expected. The recession turned out to be tougher than anyone thought. Outsourcing turned lots of corporate IT shops inside out. And new government regulations turned into the biggest corporate headache since Y2k — and this time, IT is cleaning up a mess it didn't make. But what's most likely to give you grief in the coming year is IT-shop staffing, as you take your turn in an industry-wide game of musical chairs.

No, there'll be no mass exodus of IT employees who just want a change. Tight budgets and outsourced jobs that aren't coming back mean most people in your IT shop will have to hang tough. But be prepared for raids on your IT staffers who have specialized skills — financial, security and grid-computing experience will be hot. Then be prepared to do some raiding of your own to fill empty seats. Hot talent will keep turning over as the economy improves.

Will U.S. IT shops turn against offshore outsourcing in 2004? Not likely; offshorers will keep getting better and continue to cut better deals. But we have enough experience now to spot which projects do and don't make outsourcing sense. And as companies start focusing on revenue growth instead of just cost-cutting, many critical projects will stay in-house.

New government regulations and security will become mirror images of each other: They'll both cost you a bundle, and neglecting either could put your company out of business. Maybe you can't show returns on investment on regulatory- and security-mandated projects, but at least watch for chances to make real improvements, not just quick fixes.

And radio frequency identification — the notorious RFID — will turn out to be a lot more trouble than early adopters like Wal-Mart and the Defense Department expect. Scanning RFID chips takes time and also requires extra space in warehouses and on loading docks, along with all the necessary IT resources. The payoff in better inventory control may take years to show up.

Utility computing advocates will spend the next year promising to turn your capacity headaches into fading memories. No, it won't be that easy. Our enterprise applications aren't designed for utility-style flexibility; if they were, we wouldn't *have* capacity headaches.

Will any long-promised technologies turn into big winners in the year to come? Not voice over IP, which still requires too many network upgrades — along with a tough learning curve in IP telephony — to hit the big time just yet. Remember, users will put up with network outages that delay e-mail for hours at a time, but take away their dial tones for five seconds, and they'll be screaming for IT's collective hide.

And not tablet PCs — they're eating the dust of laptops, which are taking over corporate desktops. No surprise there: IT likes laptops because they're easier to lock down, and users like them because they make less noise, take up less space and don't suffer from desktop PC dowdiness or the tablet PC's goofiness factor. A solid shift to laptops as a desktop standard will delay the success of tablets for years, and maybe forever.

Nor will Linux make real inroads on the desktop next year: Microsoft's Windows bundling deals will do a better job protecting that famous monopoly than iffy Linux user interfaces, limited supplies of business-class Linux applications and wild-eyed legal threats from SCO combined.

But one thing should turn a little brighter in 2004: corporate IT's reputation. With CEOs under fire and corporate governance under a cloud, IT's old spendthrift rep doesn't seem so bad now. And if we can keep costs under control *and* deliver projects that meet business needs, in 2004 it will finally be IT's turn to shine once again. 43394

FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

Sometimes 12 Is Enough

During a period of frequent brownouts, this hospital in Manila uses a set of car batteries wired together for server backup power. Be careful, IT pilot fish warns a tech who comes to work on the system; they can supply 50 amps for an hour. But the tech isn't impressed – it's just 12 volts, he laughs. "Minutes later, there was a loud noise, a big flash and a *'Yeow!'* The tech emerged, open-mouthed and sweating – and holding a wrench that was virtually vaporized," fish reports. "No nurse was called, by the way, but a glass of cold water helped slow down his heartbeat."

SHARK TANK

Number, Please

This university's alumni association installs a toll-free number so regional offices can dial in to update records. Pilot fish working on the project figures that all the offices together will use only 20 hours of dial-up time per week. That's why he's stunned when the first phone bill is for $10,000. "There were thousands of calls, from every state and Canada," fish says. "So I started calling our number, but deliberately misdialing by one digit. First try: a phone sex line. Second try: another phone sex line. Twenty calls, 19 sex lines. The phone company quickly got us a new number in 'safer' country."

Earthquakes? Here? Nah

This company's corporate standards require that every system have an off-site backup in case of catastrophe. But one project doesn't seem to have one. Where is it? asks pilot fish reviewing the project. "We don't have that. No one asked for it," she's told. "We decided to mitigate failures instead." Sure enough, there's a fire-suppression system, and a water-detection system in case of flood. But you're in Southern California, fish points out. How did you mitigate earthquakes? Response: "Oh, that won't happen."

That Explains It

This clerk is proud of his homemade paper spike, which looks like it's actually part of his touch-screen terminal. When he's transferred to a different department, he leaves it behind – but then discovers that he has the same kind of terminal and that he misses his old spike. So one day he arrives early and reclaims the spike from his old terminal. "That day, I arrived at work to learn that the company mainframe would be off-line for about an hour," says an IT pilot fish working there. "I also got a panicked call from the clerk's replacement. She couldn't log into the system, and she *knew* what the problem was: Someone had broken off the antenna on her computer and it couldn't connect."

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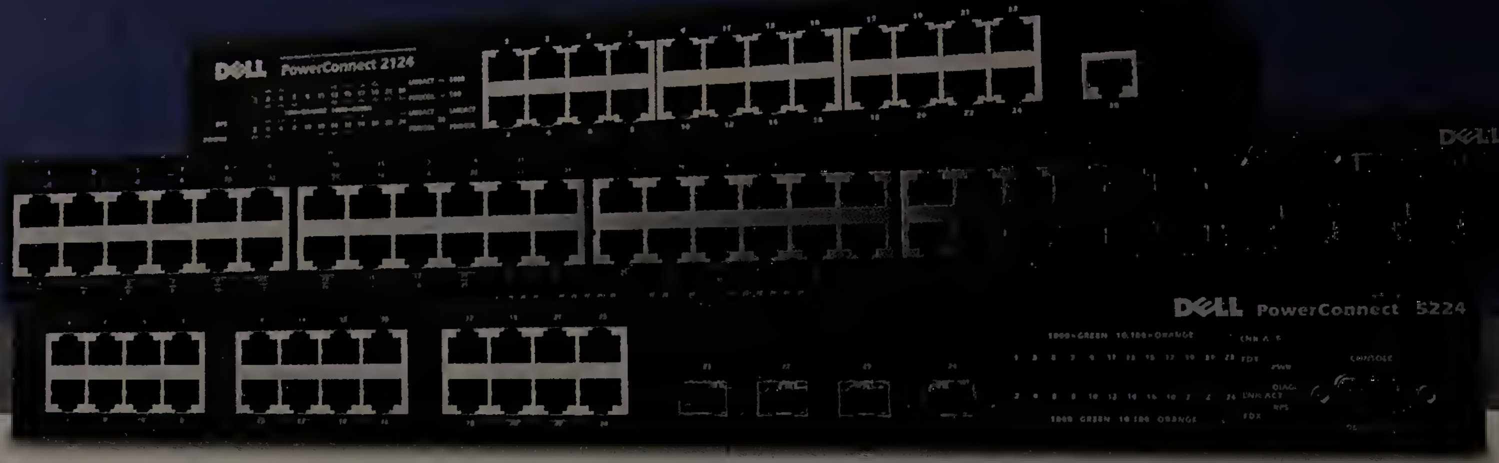

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